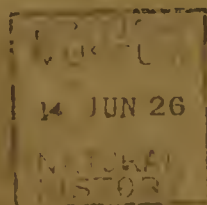


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THE
LONDON NATURALIST



The Journal of the
LONDON NATURAL HISTORY SOCIETY

FOR THE YEAR
1925

Price Three Shillings

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COMMON GULL

Photographed by W. E. GLEGG, F.Z.S., M.B.O.U., at Noss, Shetland, in 1922.

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INCREASE IN MELANISM IN THE LAST HALF-CENTURY

By A. W. MERA

IN dealing with my subject of recent melanism in British lepidoptera, it may be as well to make some preliminary remarks on the general subject of melanism, before putting forward examples of isolated species which have come under my immediate observation, as having developed a melanic tendency in recent years.

There is no doubt that the lepidoptera in the extreme north of the British Isles frequently show a form of melanism which, I think, no one would attempt to prove was of recent origin; and it is only reasonable to suppose that more than one cause may produce very similar results. The melanism of the northern specimens I look upon as entirely due to atmospheric conditions which doubtless have been unchanged for countless generations, whereas the darkening of many species occurring in the south, I will endeavour to show, is of quite recent growth, and these species all more or less frequent the country around industrial centres.

There was some interesting correspondence in the "Entomologist" some two years ago, by one of our modern and highly scientific entomologists, and by others of very long experience as field naturalists. The contention hinged on a doubt expressed by the first named, as to the fact that a large number of British insects had shown a decided increase of melanism recently; and that where melanism occurred it was probably only a case of reversion to type, as the colours prevailing in all lepidoptera of the earliest forms, were either black or white, with perhaps a few modifications, and that melanism might be classed in the same category as albinism, which when occurring in nature, as it frequently does, is only another instance of reversion to type. Personally I look upon the whole suggestion as somewhat fantastic, as the knowledge we have of the colour of insects in prehistoric times is most slender and almost entirely theoretical. The other writers on the subject hold to the fact that there has been a most pronounced increase of dark forms in recent years in the moths of the British Isles. My personal experience would show that albinos are scarce, and melanics are common, and that there is undoubtedly something at work producing melanism, but not albinism. I would lean to the opinion that albinism in lepidoptera is an indication of want of vigour rather than anything else.

I think I am right in assuming that the generally accepted view of melanism, and every other colour in insects which is conducive to their protection, is the outcome of assimilation to environment, pro-

duced by Natural Selection or otherwise; and as the resting places of insects in the neighbourhood of towns become more smoke begrimed, so we may expect the colour of insects to become darker in those districts. Personally I am not altogether satisfied that the working of Natural Selection is the sole agent accountable for the protective colouration so frequently seen in insect life, and I think there are strong grounds for holding the opinion that there is in many cases of assimilation, an immediate response to environment. I know that this view is not held by a number of naturalists, but with the few examples which have come to my notice I have been led to that conclusion. Bearing on these few remarks, I have an illustration which, although not exactly touching on melanism, may serve as an example of "immediate response to environment," which cannot be the outcome of Natural Selection. This consists of specimens of preserved larvae of *Amphydasis betularia* which were bred by me from the same parentage, producing distinctly different colouration in response to environment. Here we have a clearly different marked protective colour, where the influence of heredity has played no part, as all the larvae were of the same parentage. It would seem that, in a large number of recently melanic forms, the process of change has been abrupt and sudden, but with other species it has been a gradually darkening process, which in the latter case might be compatible with the working out of Natural Selection.

I will now give a list of several species of British lepidoptera that have shown a melanic tendency during the last fifty years or so, but apparently not before, and I will give a few remarks as to when melanism was first seen in them. I do not pretend that the list is exhaustive, as in all cases the specimens alluded to are in my own cabinet, and in most cases they have been either bred or captured by myself.

To begin with, I will refer to *Stauropus fagi*. This insect has two distinct forms, one the typical which is a lightish grey, and another form almost black. This black form was first taken by me at Chalfont in 1907, although I had bred both forms from the Reading district some few years before then. There is no doubt that this melanic form has increased immensely in the home counties of late years, and as a proof of this fact, you may refer to the Doubleday collection in the South Kensington Museum, where there is a long row of specimens all of the normal colour without a single example of the dark var. As Doubleday lived at Epping in one of the principal habitats of this insect, we may safely presume that his specimens came from the adjacent forest. During the last two or three years I have been successful in picking up one or more larvae of *fagi* in Epping Forest all of which produced the black form.

Cymatophora duplaris is another species which appears to produce a dark form more or less spontaneously. This year for the first time I bred an almost shiny black specimen from Epping Forest. This is fully as dark as specimens I have which were taken in the Lancashire Mosses in 1897, but until this year I had seen nothing to equal it from

the London district. Some forty years ago I used to take the species in fair abundance in Coombe Wood, Surrey, which is about as far off the smoke centre of London as is Epping Forest, but in those days I never took one to approach the strongly melanic specimen of this year's production.

The usual form of *Acronycta psi*, which occurs in the London district and for some 20 miles round, is a melanic production (var. *suffusa* of Tutt). This apparently is not a recent development, as its prevailing colour in the London district has only become slightly darker in my recollection. It is an insect which appears to be immune from any deleterious influence of the London atmosphere, as I once found a larva within the city walls of London, under a lime tree which formerly flourished in Tokenhouse Yard. I have never seen this form (var. *suffusa*) where the air is absolutely free from smoke. The lightest specimens of *psi* in my cabinet are from North Cornwall and Devonshire, where doubtless the air is as pure as in any part of England.

I believe it was in the year 1881 that I saw exhibited at the South London Entomological Society a series of *Taeniocampa opima* that had been recently taken on Wanstead Flats. These specimens were all of the type form, being of a somewhat light grey colour but rather strongly marked. It was not until about the year 1900 that I first took the insect from that spot myself, and then the specimens were mostly of a dark slaty colour with only an occasional light grey specimen. Since that date I took the species each year until 1913, when I left the neighbourhood. During that period the tendency was for them to become even more dark, especially during those seasons when the grass was burnt during the early spring. It always seemed to me that those specimens taken when the ground was black through burning, were darker than those when the grass was not burnt, and that there really seemed to be some innate power of response to environment wholly apart from the weeding out process of Natural Selection.

Miselia oxyacanthae is one of the few British insects which has a melanic form of really ancient date. This form was named by Hawarth as another species, and called the "dark crescent," and is now known as *oxyacanthae* var. *capucina*. It is true that recent melanism has settled on the var. *capucina* which is now almost black in Epping Forest, whereas the type appears to be much the same as ever, but perhaps not so numerous as the var. in its various degrees of intensity towards black.

Catocala nupta has shown of quite recent years a form of melanism in a way somewhat difficult to account for. It is a suffusion of the whole of the under wings with dark scaling showing the usual pattern beneath. I have a specimen taken at Loughton in 1918, and a few others have been taken principally in the north of London. As most of us know, the resting habit of this insect is, in a way, such as to hide all trace of the underwings, and we still have to search for the cause of this development as apparently it is in no way protective.

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In touching on the geometers it will be seen that melanism is more in evidence in this group than in the other groups of British lepidoptera, and it may be taken as evidence of its recent origin, by the fact that in Edward Newman's book on British Moths, published in 1869, there is scarcely any allusion whatever to melanism in the geometers.

Perhaps one of the latest geometers to start a dark form is *Selenia illunaria*. It has evolved this year 1925. It is not a black insect, but an almost unicoloured dark brown with the usual markings very faintly indicated. The insect came from the neighbourhood of Durham, a locality which greatly favours the production of melanism.

Odontopera bidentata has also a unicoloured almost black form. My earliest specimens are dated 1902, and are from Leeds. Doubtless there are other places in the north where this form occurs, but to the best of my knowledge it has not come as far south as London. The odd specimens that I have come across in Epping Forest and elsewhere round London of late years, have all been of a darkish form, but not black, contrasting very greatly with a light specimen I have in my cabinet, taken by me some 50 years ago in Coombe Wood, Surrey.

In various parts of Yorkshire *Phigalia pilosaria* has evolved a black form, and my earliest example is dated 1909. I have been looking for a similar strain in Epping Forest for some years past, but so far, I have seen nothing nearer than a somewhat unicoloured rather thinly scaled brown form, which looks as if it might develop into something more pronounced in the direction of melanism. I believe this insect in the north usually becomes melanic all at once without any gradual growth of darkening.

Amphidasys betularia was the first pronounced example of a British species of the geometers to strike off into a black form without any gradual process of change. It was probably some 60 or 70 years ago, when this black variety first occurred in the manufacturing districts of the north of England, and out of respect to our distinguished British lepidopterist, Henry Doubleday of Epping, this var. was named *doubledayaria*. From that time the var. has gradually increased its range from the north and midland counties, but it was not until 1897 that I recorded my first capture of *doubledayaria* near London, which was in a lane leading to Little Ilford. Almost directly after that date the var. became as common as the type, and now this year 1925 from five wild larvae taken in Epping Forest, each one produced var. *doubledayaria*. Intermediate forms between the type and *doubledayaria* are rare, so that apparently the change has been abrupt and sudden, which is so often the case with melanic forms. As a proof of the rapid change in the colour of this insect, I may say that in 1891 I bred from a captured female in Wanstead Park a long series which did not produce a single var. *doubledayaria*.

Hemerophila abruptaria has a distinctly different dark form, although not black, which I believe is confined to the neighbourhood of London. My specimens are dated 1906, and some few years before then, this variety was considered extremely rare. Now it is comparatively common, more particularly in the north of London. I have

INCREASE IN MELANISM

bred this species several times, both from the type and var. but I have never bred a really intermediate form.

Boarmia repandata has a most pronounced melanic form from Sheffield, which now appears to be the most frequent form in that district. Dark specimens from Durham are closely following those from Sheffield, but those from Durham show the usual markings on a very dark background, whereas the Sheffield specimens are absolutely black. The increase in melanism in this species in Epping Forest has been very pronounced in recent years. I have a few specimens that were taken there by me some forty years ago which are only just moderately dark, but since 1913 all that I have bred or taken have been decidedly darker, and two specimens in particular, one in 1915 and another in 1921 from Loughton, are as dark as the specimens from Sheffield were in 1907, whereas those bred some years later from Sheffield in 1913 are of the absolutely shiny black form. I may add that in breeding these dark forms both from Sheffield and Durham, there was no instance of reversion to type.

The first perfectly black specimen of *Boarmia rhomboidaria* which I ever saw alive was bred by me from a wild larva taken from a hedge at Bexley, Kent, in 1924. Until then I had taken nothing darker than the usual London form var. *perfumaria*, which has been the prevailing form in this district as long as I remember, although perhaps it has gone through some intermediate stages, but the black form from my own neighbourhood has yet to be discovered.

In the next species, *Abietaria*, the type form seems almost to have gone, both from the New Forest and also from Box Hill, as all those that I have bred from these places of late years are of a strongly melanic strain, and many of them are entirely black with only the slightest indication of the usual markings.

It was only last year that I first made the acquaintance of a melanic form of *Boarmia roboraria* in the woods of west Essex, and although this form is not so black as a form that turned up some years ago from the neighbourhood of Coventry (specimens of which were in the cabinet of the late J. C. Capper), it is only yet another clear proof of the spread of melanism in the outer London District.

Boarmia consortaria has a corresponding melanic form, which first came into my possession from Sutton Coldfields in 1918. The last two species appear to be going through a gradual process of melanic evolution. *Tephrosia consonaria* on the other hand, seems to have developed a black form suddenly, which first turned up somewhere in the neighbourhood of Maidstone. I obtained my specimens in 1904 when it was looked upon as quite a rarity, but since that date it has been bred somewhat freely and is now in most of our cabinets.

Next to *Amphidasys betularia* I should look upon *Tephrosia binndularia* (the single brooded species) as being one of the earliest geometers to show a melanic tendency in the midland counties. This dark form I believe first occurred in Delamere Forest and was named *delamerensis*. It was not until the year 1918 that I saw a specimen of *delamerensis* in Epping Forest. Up to about that date the type

was taken pretty freely both in Epping Forest and at Hainault a few miles distant, but I never took a specimen to show any inclination towards melanism until 1918 in either of these localities. The closely allied species *crepuscularia* (the doubled brooded species) does not appear to be so prone to melanism as the preceding species, although the late Major Robertson used to take a dark form at Swansea in more or less recent years. In hybridizing a dark ♂ *binudularia* (Loughton) and type *crepuscularia* (Sussex), the result was a majority of melanics showing that the dark form was again dominant.

Then we have a few species that have gone through a darkening process which was certainly unknown to British collectors fifty years ago. *Ephrya pendularia* first became darker at Market Drayton (my earliest 1898), *Venusia cambricaria* (Sheffield, 1910), *Acidalia incauaria* (London, 1915), *Macaria liturata* (Delamere Forest, 1905). A particularly dark form of *Pidonia atomaria* has occurred in the north. It is entirely black with a white dotted fringe, the usual markings being quite obliterated. My first specimen came from Bury in Lancashire in 1906, and others from Huddersfield in 1919.

The genus *Hibernia* show some very interesting examples of the increase of melanism. The species *leucophearia* has been under observation by me for a good sixty years. I can't say exactly when I first saw a black one, but the earliest in my cabinet is dated 1903, and since then the black form has become increasingly abundant both at Chingford and Richmond Park. I can safely say that as a youth the black form was unknown either in Richmond Park or Coombe Wood, which were then my favourite hunting grounds. *H. progenmaria* has a well known unicoloured dark brown form in many parts of the north of England. This has evolved in modern times. My first melanic specimen came from Leeds in 1903. There has been some increase in the darkening of them in Epping Forest, but not to a very marked degree. In 1921 I took at Loughton a specimen with forewings almost as dark as the Leeds specimens, with the difference that the underwings were almost normal, whereas with the Leeds specimens both upper and underwings are melanic.

Perhaps one of the most recent developments of melanism is in the species *defoliaria*, and as far as I know it has first shown itself in Epping Forest. Specimens now are occasionally taken which are of a unicoloured black form with light fringes, the female being entirely black with the exception of two small ochreous spots just below the head. The first one I succeeded in getting was in 1917. Since then I have bred one or two more, but as most collectors know, it is a particularly obstinate species to breed, for when the larvae go down to pupate that is generally the last that is seen of them.

The genus *Oporabia* show some interesting results in modern melanism. The species *dilutata* produces a London form of a dull unicoloured slatey shade which seems to me to have altered very little in my recollection; but its congener *christii* has evolved a rich shiny black form, which I bred in 1922 together with the pale light type from Buckinghamshire.

There is also a strong melanic form of *autumnaria* which I bred in 1913 with intermediates. These were from ova which were sent to me from Middlesborough.

I hope the foregoing remarks are conclusive evidence enough to show that definite force is at work in altering the colour of British lepidoptera, and I will there leave the subject for further discussion of its various and complicated phases.

ON THE OCCURRENCE OF CERTAIN FERNS IN SURREY

By R. W. ROBBINS.

THE dry chalk, sandy commons and heavy clays of Surrey present no natural situations suitable for the growth of such ferns as the smaller spleenworts and species which are normally to be found in moist rocky situations. Old sheltered walls, whether of stone or brick, are the substitute chosen by the wall rue (*Asplenium Ruta-muraria*, L.), and occasionally by other forms, and it is noticeable how frequently the brickwork of railway stations beneath the edge of the platform, even in the chalk districts, is ornamented by such growth.

In the west of Surrey a cross-country line with an infrequent train service is remarkable for the abundance of ferns below the platforms. In addition to *A. Ruta-muraria*, *A. Trichomanes*, L., is abundant, the hart's-tongue (*Scolopendrium*) is very frequent, and at some stations *Ceterach officinarum*, Willd., grows freely. It is a facile assumption that these ferns have arisen from spores blown from neighbouring gardens, but a discovery I made last summer at a railway station led me to doubt that this was the whole truth. I found among other species a plant of the maidenhair (*Adiantum Capillus-Veneris*, L.) of quite a fair growth and fruiting freely. This delicate fern is not likely to be grown in garden rockeries, as it would not be expected to survive frost. In Europe it is a plant of the western seaboard, from Ireland southwards, and of the Mediterranean area. It is universally distributed in the warmer regions of the world. Its nearest permanent stations are the cliffs of Dorset and South Wales. *Ceterach* also, although hardy, is most at home in Somerset and other western counties. Moreover it is quite noticeable, at these railway stations, that the platforms facing south and west are much the more abundantly supplied with ferns. I have little doubt that the spores from which these plants have sprung were in many cases carried by the strong winds from the south-west to their present situation, and finding there a sufficiency of moisture and shelter, germinated and became established. How long the maidenhair will survive the cold of inland winters is a matter of doubt.

LONDON BIRDS

By A. HOLTE MACPIHERSON

SUMMARY OF NOTES IN 1925

○ N January 8th, a Kingfisher flew down the Long Water in Kensington Gardens; a few moments later, a Kestrel settled in an elm tree near the Sanctuary.

January 9th, five Herring Gulls on the Serpentine.

January 18th, heard a Blackbird singing strongly in Kensington Palace Gardens, an early date for this performance.

January 27th, about 50 Tufted Duck are now on the Serpentine.

February 2nd, one Black-headed Gull in Hyde Park has nearly attained its dark head: two others are almost as advanced.

February 6th, a few Common Gulls and one Herring Gull on the Serpentine. Counted 59 Tufted Duck and 17 Pochards there.

February 17th, a pair of Egyptian Geese were to-day up in an Elm tree in Kensington Gardens.

February 19th, two immature Common Gulls on the Serpentine.

February 25th, over thirty Pochards on the Serpentine. Most of them left after about ten days.

March 11th, only about a dozen Tufted Duck and the same number of Pochards now left on the Serpentine.

March 16th, a hen Blackbird with an almost white tail in a shrubbery close to the Bridge. Chaffinches singing well.

March 22nd, very cold N.E. wind, about a hundred Black-headed Gulls still on the Round Pond. As a rule nearly all of them have left by this date.

March 31st, all Pochards have left the Serpentine. Saw a Great Crested Grebe in full breeding plumage on the Round Pond.

April 8th, a Willow Wren singing in Campden Hill Square. Only five Tufted Duck appear now to be left on the Serpentine, and of these three are males.

April 9th, heard a Chiffchaff singing in Kensington Gardens, and another in Hyde Park, near to the Ranger's Lodge.

April 18th, Willow Wren singing in Kensington Gardens.

April 21st, heard Willow Wren's song in the grounds of Holland House.

April 27th, Mr. R. Stonham tells me that on this day he saw a Common Sandpiper by the Long Water.

April 28th, influx of Willow Wrens into both Kensington Gardens and Hyde Park. Saw a Swallow over the Long Water, and heard Chiffchaff again by the Ranger's Lodge.

April 30th, a Reed Warbler singing in the Dell at the east end of the Serpentine.

May 4th, watched a Great Spotted Woodpecker drumming most persistently in the grounds of Holland House. Mr. R. Stonham told me that to-day he again saw a Common Sandpiper by the Long Water.

May 5th, my wife heard a Cuckoo calling from the direction of Holland House.

May 6th a Lesser Whitethroat singing in The Dell.

May 9th, a Garden Warbler sang in Kensington Gardens; saw a Sand Martin over the Long Water, and heard Chiffchaff again singing by the Ranger's Lodge in Hyde Park. [This Chiffchaff was seen and heard within a few yards of this spot on many occasions throughout the summer, up to July 24th. I saw no signs of it having a mate or a nest]. Saw from the top of an omnibus a pair of House Martins putting the finishing touches to a nest which they had built under a balcony on the third floor of Castlenan Mansions by Hammersmith Bridge.

May 11th, Blackcap singing in the grounds of Holland House. Great Spotted Woodpecker drumming hard; in the evening it continued for two hours on end. It is nearly always on the same tree.

May 13th, Whitethroat singing in Kensington Gardens by the Bridge, and a Garden Warbler singing in the grounds of Holland House.

May 14th, heard Willow Wren, Chiffchaff, Wren, Garden Warbler and Blackcap singing simultaneously at Holland House. A Whitethroat sang in the Kensington Gardens Sanctuary. I heard this bird daily till near the end of the month, when I left town for a few days. It appeared to be a solitary male.

May 15th, a Swift over the Long Water.

June 2nd, a brood of Blue Tits has hatched out in one of the nesting boxes in my garden. Saw some young Mistle Thrushes at Holland House.

June 4th, saw Spotted Flycatcher near the Ranger's Lodge.

June 11th, found Great Spotted Woodpecker's nest in grounds of Holland House, young fledged: there appear to be two or perhaps three of them, and as is usually the case, they are very noisy. This nest is a rather curious one, in the trunk of an old pear tree, just under a branch. The opening is only 4 ft. 4 in. from the ground and seems to be an old one which has had very little done to it recently.

June 17th, a Great Spotted Woodpecker visited an ash tree in front of my house: this is the only occasion upon which I have seen one in Campden Hill Square.

June 30th, Swifts have not been seen so numerous or regular in their visits to the Serpentine as in recent summers, but I saw about a dozen there this evening. There are still five Tufted Duck to be seen there, of which three are males.

July 5th, on my way to the Zoological Gardens, saw a Tufted Duck with six lately hatched ducklings on the lake in Regents Park.

July 10th, a Tufted Duck with four young a day or two old on the Serpentine.

July 17th, saw a Cuckoo in the Kensington Gardens Sanctuary being chased by a Crow. Perhaps it was the Cuckoo referred to in a letter to "The Times" which appeared yesterday in which Mr. W. D. Lang of the Natural History Museum says that he heard a Cuckoo singing in Kensington Gardens on July 14th, a remarkably late date. To-day I saw a Tufted Duck with eight ducklings in St. James's Park.

July 21st, Mr. D. Gunn tells me there are two broods of Tufted Ducks, of eight and seven respectively, in St. James's Park: and Mr. Harold Russell writes to me that there is a Tufted Duck with eight ducklings on the lake in the grounds of Buckingham Palace. This species is evidently establishing itself firmly as a London resident: a few years ago it was a somewhat scarce and irregular winter visitor.

July 28th, the last day during the summer upon which I heard a Thrush singing in London.

July 29th, numbers of Swifts in Kensington Gardens. Watched a pair of Spotted Flycatchers feeding two young birds sitting on railings close to Hyde Park Corner. Saw a Whitethroat in the Kensington Gardens Sanctuary.

July 30th, heard Willow Wren's autumn song in my garden.

August 6th, Willow Wrens singing in Kensington Gardens and Hyde Park.

August 7th, an invasion of Willow Wrens. Heard one in this Square, several in Kensington Gardens, and there were at least a dozen, mostly young birds, in Hyde Park Sanctuary.

To-day a Common Sandpiper flew across the Serpentine. This is the first I have seen here in autumn since August 24th, 1904. They occur fairly often during their spring migration.

August 8th, two Swifts over the Serpentine.

August 10th, one or two Swifts near the Surrey end of Hammer-smith Bridge: the last I saw in London.

August 14th, Willow Wrens still abundant in Hyde Park.

August 15th, Brown Owls have been very noisy of late at night on Campden Hill.

August 18th, a Whitethroat and about a dozen Willow Wrens in the Kensington Gardens Sanctuary, and a Swallow over the Serpentine.

August 25th, a Spotted Flycatcher in the Kensington Gardens Sanctuary.

August 27th, several Willow Wrens still in Hyde Park.

August 31st, a Whitethroat in the Kensington Gardens Sanctuary.

September 4th, Chiffchaff singing weakly in Hyde Park.

October 8th, the drake Gadwall is on the Round Pond, his sixth autumn there.

October 30th, Mr. Lawrence J. Tremayne writes to me that on this day both he and his wife saw several Black-headed Gulls perched on trees in St. James's Park.

November 20th, seven or eight Tufted Duck and three Pochards on

the Serpentine. Saw a Goldfinch in the Kensington Gardens Sanctuary, where a Wren has taken up its abode. Thrushes are singing now steadily.

November 24th, two Fieldfares flying over Kensington Gardens.

November 26th, ground hard with frost. Thrushes have ceased singing.

November 27th, another Fieldfare in Kensington Gardens.

November 29th, two Herring Gulls on the frozen Round Pond: a Common Gull on the ice on the Serpentine where it remained some days.

November 30th, two Redwings on lawn close to Hyde Park Corner, a favourite spot with them in hard weather.

December 7th, the Redwings by the shrubberies at Hyde Park Corner now number seven.

December 8th, saw a Kestrel flying over the Long Water.

December 10th, the Redwings at Hyde Park Corner have increased to about twenty.

December 14th, the Serpentine is almost entirely frozen. Counted fifteen Pochard and about as many Tufted Duck.

December 24th, Redwings still at Hyde Park Corner, and to-day I saw quite a dozen in St. James's Park.

December 28th, about a dozen Coot and twenty Tufted Duck on the Serpentine.

December 31st, during the warmer weather which followed Christmas, most of the Redwings left Hyde Park: very few now remain. During the gales of the last three days, the number of Tufted Duck on the Serpentine has increased to forty one.

CHANGES IN THE VEGETATION AT THE BLACK POND, ESHER

By HAROLD J. BURKILL, M.A., F.R.G.S.

THE Black Pond is formed by an embankment at its western end across the hollow where the drainage from the surrounding slopes collects into a small stream flowing westwards to join the River Mole.

Ten years ago the whole of this area between the roads from Esher to Cobham and to Oxshott was covered with fine timber, large pines occupying the central portion, with a narrow belt of mixed trees on each side along the two roads. These two marginal zones are unchanged, so there is not so much interest attaching to them, but as alterations are taking place in the nature of the flora of the central area, it may not be inappropriate to give a few details concerning the position.

The soil is mostly of a fine whitish sand, with pebble beds cropping up in the ridges to the north of the pond, and peaty conditions prevailing more to the south and west where the pines grew most thickly. Under these trees hardly any other forms of plant life grew. The soil was thickly covered by a carpet of pine needles, with a few plants of *Calluna vulgaris*, *Erica cinerea* and *E. tetralix* in places, while along the southern edge of the pond were several small pools of peaty water with bushes of *Salix repens*. The embankment where the soil is more clayey was marked by a few *Quercus pedunculata*, *Betula verrucosa*, *Salix cinerea*, *S. caprea* and *Castanea sativa*.

Phragmites communis occupied the eastern end of the pond itself and spread in a thin belt along the northern edge with denser colonies at the north-western and south-western corners. A few *Salix cinerea* bushes were to be seen at the eastern end, where also grew *Viola palustris*. *Eriophorum* was plentiful on the southern side, and *Anagallis* abundant in the north-west corner.

During the war the pines were felled by a Canadian lumber gang, only a few trees being left along the margin of the pond, and most of these were blown down in the following winter. The area now is being claimed by *Betula verrucosa* and *Molinia caerulea*. *Betula tomentosa* is to be seen more often to the east of the pond, but nowhere is it in the same profusion as the other species of Birch.

Salix repens has gradually died out, as if unable to stand the light; not a question of drought as the pools still remain, and there are a few plants still left under the trees along the Oxshott road. Yet in other places in the neighbourhood this plant grows out in the open, as on Esher West End Common, Epsom Common, and Wimbledon Common.

Anagallis tenella and *Viola palustris* seem to have vanished from the pond, but the latter occurs in localities on either side of this place. *Phragmites communis* has increased very much and has spread towards the centre of the pond, encroaching on what used to be open water, so that only a small area is now left for the bathers. *Eriophorum* also is increasing, and last summer the white plumes were to be seen in abundance all along the south side together with the yellow spikes of *Narthecium*. The increase in these plants points to a silting up of the pond. The level of the water has not been appreciably altered. For some years this overflowed by a cutting through the middle of the embankment on to the ground below, which thus became very swampy as there was no direct drainage channel. Now, however, this outflow course has been blocked up and an old culvert in the south west corner of the pond carries the water off to a channel cut across the lower ground.

Mr. R. W. Robbins has suggested that with the destruction of the pines the surface of the soil has become drier, and as it is now exposed to the wind and the rain, loose particles can be carried down the slope to the pond thus causing a silting up process, which if continued will in a few years reduce the pond to the state of a marsh.

On the higher ground to the south east on Oxshott Heath, the pines remain undisturbed, and one can there see conditions similar to those that prevailed round the Black Pond before the war, and comparisons can be made between the natural and the altered conditions. Little attempt has been made to re-afforest the cleared area. A few young pines have been planted on the ridge north of the pond, but they are not flourishing, being too much exposed to the wind. Nature has been allowed to have free scope to clothe the bare ground and she is doing it with thousands of young birches, *Molinia* and *Epilobium angustifolium*. These have taken the place of the pines since man gave them the opportunity, but on the west side of the Cobham road *Betula verrucosa* is appearing also in large numbers, and here nature has had no assistance from man. The upper part of Esher Common for years has been open heathland, covered only with a thin growth of heather and grass, as if the sandy soil were too dry to support anything else. Now large numbers of birch seedlings are colonising this area, spreading across the heather entirely self-sown.

In the same way *B. verrucosa* has appeared during the last four years on the top of Wimbledon Common, near the windmill, where the ground was badly burnt in the hot summer of 1921, and in Kingston Vale, and also on Stoke Common, Bucks. In these places it is colonising the open grassland and growing vigorously, some of the bushes on Wimbledon Common being over 8 feet high.

It is possible that there is some subtle change taking place that is exceptionally favourable to the germination and growth of *Betula*—a change that so far we have failed to observe and realise, but which is having its effect on the vegetation.

THE GREATER SPOTTED WOODPECKER

By J. ROSS.

IN the clear light of a morning in spring, nature wears bright colours, soft, subdued and restful colours. Trees and bushes show the tender green of fresh leaves, and birds, beasties and insects are busy and joyous. On such a morning the greater spotted woodpecker may not be seen, although his colouring close at hand provides sharp contrasts, but in areas where the species occurs, something is amiss if his jolly, his almost rollicking call does not run through the wood. By the unobservant and uninitiated the happy and not unmelodious variations of the chut call may not be noticed; the greater spotted may have no song, but the subtle variety of its spring calls defies memory and analysis; if the species does not sing, it drums, and thereby presents a problem for the naturalist and a perennial interest for the observer.

Attentive ears and knowledge of the likely inhabitants of a woodland may assist in identification of the greater spotted, when the call, or drumming or tapping on a tree trunk or bough is heard. Affection for the species probably directs one's rambles through its haunts, but the birds too ramble in most seasons of the year. The greater spotted's attachment to their nesting site makes a claim on one's esteem. Possibly this attachment is a phase of the territorial idea of the bird's manner of life, but in an area where suitable sites for nesting abound, the attachment to sites in my experience is much less strong, and on occasion occupied sites have been much closer than observation elsewhere would lead one to anticipate with the territorial idea in mind; this may be due to the existence in this area of numerous breeding starlings, which take or endeavour to take nesting sites that woodpeckers have excavated.

In his attitude to the greater spotted the starling in this area is not a gentleman. A woodpecker hole close to a much frequented road, with such numerous chips scattered around as to prove beyond question that it had been made that year, was occupied by starlings. In an earlier year in the same district a starling, perched on the stump of a broken bough above a greater spotted's hole, chattered and gossipped to the annoyance of the woodpecker hen, who was either finishing the inside of the hole or incubating. She put out her head several times and looked up at him, but he did not desist until the cock woodpecker arrived and drove him away. Again, in this area parent woodpeckers had been deterred from feeding their chanting youngsters by the presence of humans sitting near. When the humans moved off, both

cock and hen greater spotted arrived. The cock fed the nestlings, while the hen remained on the bole of the beech (*cf.* J. H. Owen, "B.B.," October, 1925, Vol. XIX., No. 5, p. 127.) The cock left, and the hen began to feed the young; she was still at the hole when a starling flew down and dived over her head into the nest. The consternation and distress of the hen woodpecker seemed plain, and when she flew away there was much anxious chutting. After being in the hole some time the starling looked out, and seeing the way was clear, left. Chanting was resumed, and the youngsters or youngster remained alive. A week later a well-fledged youngster lay dead at the foot of the tree; it had not been dead long, and was partly covered by some child's pathetic offering of buttercups and grasses. Undeniably the starling is not a gentleman.

Persistent drumming in January, 1918, attracted me to two partly-decayed beech trees, which already contained a series of woodpeckers' holes. The trees are so close as to appear to grow together at their bases, and each trunk has woodpecker holes. Early in 1918 part of one tree was snapped off in a gale; the species nested in this damaged tree that year, and next year another piece was fractured, but the support of branches firmly driven into the earth prevented a complete breakage and kept the partly-severed portion of the trunk in a horizontal position; this part of the trunk contained holes, including the one occupied in the previous year. The woodpeckers prepared a site in the trunk of the other tree, but that hole was clumsily cut into by some human enemy. The birds resorted to an old hole in the partly-severed horizontal part of the other trunk and there reared a brood. The hole on inspection in the following winter, when it was much mildewed, was an irregular cavity of considerable size; the shape was partly due to there being sound hard wood in the trunk; at one place excavation had been carried so far that only a quarter of an inch of wood remained.

The species used these two trees for nesting from 1917 to 1924, and the number of holes already made in 1917 suggested that the trees had then been used for several years. Both in 1923 and 1924 their nesting operations were interfered with. The rotten wood was apparently broken away by the insertion of a bar of wood or metal in the hole and the application of force. So far as I know, this site was not used in 1925, but the species seems to have nested in the area for many years; another dead beech not far away contained many holes, and was occupied by starlings until someone set it on fire and it collapsed.

Resonant drumming in the spring of 1918, directed my attention to a crab tree that proved to be another nesting site, and at that time contained several holes. A broken bough had lodged in the tree, the top of which being a dead and not thick bough, made an admirable perch for loud drumming. The birds here used the hole in which the nest was in 1918 for the next two years, and a hole begun in 1919 was not used as a nest until 1921. Youngsters were heard chanting in this tree until 1924.

It is fascinating to watch greater spotted woodpeckers at the nesting site, either when the hole is being made, or during incubation, or when the young have hatched. Both sexes engage in making the hole, in incubating and in feeding the young. The birds are very alert, and differ in temperament as to the risks they will run in following these occupations. The nesting sites I have known have not been in the depth of the wood, or if so have been near tracks passing through it. The birds therefore have been liable to interruption, especially on those days that I was able to give to observation. I have concluded that the hen does most of the work in preparing the hole, and is the more concerned in incubation, but the cock bird does a good share in feeding the young, particularly soon after hatching. It is exciting to settle down to observation at a site uncertain whether the birds will give one a show; they vary in boldness, or it may be in alertness, and the factor of necessity in carrying on at the moment comes into play. If one watches during incubation one has to allow for uncertainty as to one of the birds being on the nest when one arrives, and if so which bird; but the cock may arrive, approach the hole and utter some low call; the hen may leave and the cock enter—one has seen the change over. With some pairs the hen will take more risks than the cock, presumably from the greater intensity of the maternal feeling. Both sexes in other pairs or in other years seem exceptionally timid.

Patience is rewarded; if one has good fortune, the hen may be seen working away at the hole, trimming it from the outside, and one may watch chips falling. Is it ages of inherited practice that results in so beautifully round a hole, or is it that the bird's body is round at its broadest part? When trimming, the bird frequently passes the front part of the body into the hole as if testing its size or shape for convenient access. A noise in the wood, the snapping of a twig even, may cause a bird so engaged to cease working and listen; she may resume after a pause or may leave. I have known a bird cease working, and have later learnt that the reason was the approach of some people. I had wondered how internal excavation went on, and in the spring of 1925 at the first nesting site made in a dead hornbeam I heard tapping, no bird being visible. The tapping proceeded, with interruptions when human voices could be heard from time to time. A track passed near this site, and the undergrowth round the base of the trees was littered with chips, but none of those passing noticed them. The tapping went on for an hour, and I circled round the tree, watching from all sides as far as intervening trees or bushes would allow. I was close to the tree on the side away from the hole when the bird left and gave the greater spotted call. Does the confinement of the hole and its atmosphere cause the bird no appreciable inconvenience?

The finding of many new chips near a nesting site in autumn has induced me to think that holes sometimes may be begun at that season. I have known holes begun in the autumn, but have not known such a hole used for nesting. One hole begun in autumn in a splintered beach bole, because of the narrowness of the wood where it

was placed, appeared to be a hopeless effort; was it the work of a young bird?

The wariness of the species, particularly the cock bird, during incubation and the nesting period, makes observation sportive in many cases. Some birds when feeding nestlings carry on apparently indifferent to observation; this may be when the young are newly hatched. Other birds of the species seem absurdly reluctant to go to the hole. I well remember a cock bird alighting on a crabtree below the hole; he hopped up the trunk, passed the hole, and remained some minutes above it; he then came down backwards, passed the hole again, and flew off; he pecked the trunk or made a pretence of doing so, and may have conversed in low tones with his mate in the nest. The birds at the beeches in 1919, when they were interfered with and bred in the broken horizontal bough, were very entertaining. The cock would appear in the trees and, by a gradual approach from branch to branch, would arrive at the horizontal bough where the nest was; he would hop along the side of the bough away from the observer, his head only being visible now and again, and would get to the hole. The observer plainly was under observation. Sometimes this cock, having arrived at the nest, would go in and perform his duties, and sometimes he postponed them. The fall of other trees has left a clear space in front of these beeches, and there are several large oaks near by. When one was watching, the birds would fly across the clearing from different directions, and would go into oaks and search for food, sometimes pecking out grubs. It was necessary to be slow in using field-glasses; rapid movement of the arms alarmed the birds. At times the birds became excited at being unable to visit the nest and would call loudly in agitation, but still keep well out of sight; they were not as secret and elusive as I have found green woodpeckers to be at the nesting site. My observations have been made in woods to which the public has free access and uses it, but some parts are much more visited than others, and the habits of the birds differ according to the number of humans regularly in the neighbourhood; of that I am convinced.

The chanting of the nestlings is another of the species' attractions. All the nests I have known have been considerable distances up the trees; when the nestlings are very young, when one stands close under a hole that is high up, it is not much more than possible to hear the chanting; with other birds at a later stage the chanting can be heard distinctly at a distance of sixty yards, and attracts the notice of casual passers-by. When the hole is under observation, and the parent birds are alarmed and will not visit the nest, they will call frequently and noisily, and I think they endeavour to quieten the noisy youngster or youngsters; but once and once only have I known them succeed. This happened at a hole in an ash in a part of a wood where the species habitually uses these trees. In this case, so far as I could judge from the chanting, only one youngster remained, and it came to the mouth of the hole to inquire the reason of the absence of its

parents. It may be that it saw the observer, but for some reason it ceased chanting.

To hear the chanting of a young greater spotted become gradually louder and to see its scarlet crest appear at the hole, as the bird looks on a world as yet unfamiliar to it, is a charming experience when it is new. From the volume of chanting and the habit of the youngster or youngsters appearing at the entrance to the nest, I have concluded that successful broods are frequently small in the area I have worked. Single youngsters or one of a pair are much more likely, I think, to appear at the mouth of the hole than when the brood is more numerous.

It is at the nesting period that observation of the species is most rewarded, but at other seasons, when the trees are leafless, much may be learnt of the birds. When courting is in progress, and the birds chase each other in rapid flight, it is remarkable how difficult it is to pick them up when they have alighted, although the approximate place is known. At such a time one may hear a whinnying note when the bird is in flight; I confess I do not know how this note is caused, and I cannot recall having heard it except when the birds have been in flight, and then usually when about to alight. Again, how interesting it is to see the greater spotted attack the marble galls on oak trees. It wrenches the gall off, takes it to a favourable situation and hammers it open to get the grubs.

My observations have never been continued day after day at any period of the year, and have not scientific value from that standpoint. I am much interested in the existence of the red patch on the forehead of the youngsters and on the back of the head of the cock bird, and of the absence of such colour on the head of the hen after the first year, but I venture no explanation; it would be dangerous to do so without a fairly intimate knowledge of some American species of woodpeckers.

ARCHAEOLOGICAL INSPECTIONS

Westminster Abbey.—Visited January 17th, 1925.

WE paid a visit to some of the little-known nooks and crannies of London's mediaeval monastery, under the guidance of Mr. H. V. Molesworth Roberts. Gathering first in Dean's Yard, the company visited successively Little Dean's Yard, the quadrangle of the school; the school coal cellar, a crypt eight centuries old; the great school hall and Busby Library, by the courtesy of the headmaster; the interior and fine staircase of Ashburnham House, and the site of the refectory behind; the gymnasium of Westminster School, with site of St. Dunstan's Chapel; the ancient remains in the private houses of the Rev. Canon Donaldson, Archdeacon Charles, and Cannon Perkins, by the special kindness of these gentlemen; and other parts full of the associations of monastic days.

An interesting discussion, led by Mr. Roberts, was held on the visit on Tuesday, January 20th, at which various aspects of the Abbey and its history were discussed.

St. Martin's, Eynsford, Kent.—Visited March 28th, 1925.

Of the several notable pilgrimages to places of historical interest undertaken by us during the year, none was more productive of profit and pleasure than that to this "gracious valley of the Darent with its swift clear waters." The permanent record of our visit, which is available for members, is very complete. It is of special value, for it contains much original work descriptive of the old church (undeservedly neglected by writers in general) together with numerous beautiful photographs by Mr. V. E. Walker.

The building has an interesting plan development. To-day, it consists of chancel with apsidal east end, nave without aisles, double north transept, south transept, tower at the west end of nave, and a west porch at the west end of the tower. The shingled spire, rising from the tower, just sufficiently asserts itself in the tree-filled valley by the river.

St. Andrew's, Greenstead, near Chipping Ongar, Essex.—Visited May 16th, 1925.

We revisited this remarkable timber-built church of Essex after fourteen years, and the binding in of our new record with that of the earlier one at Mr. Austin's suggestion, shows an interesting development in our recording scheme, which has been brought about by more members co-operating now than formerly.

The plan of the church, with its nave, chancel, western tower and south porch is the outcome of building activities carried out over many centuries. An outstanding feature is the nave, which apart from its modern roof and dormer windows, is unique, and is thought to show

how Saxons built their churches in such stoneless counties as Essex. The walls are constructed of half tree trunks ranged upright side by side, the inner faces of which show, inside the nave, as adzed flat surfaces, whilst the outer faces show as the natural half round forms of the tree trunks.

The question as to the method adopted by the early builders to light such a church as this, is one of the many problems which remain for us to investigate in connection with this interesting building.

Romsey Abbey, Hants.—Visited July 10th-14th, 1925.

This successful week-end was in the able hands of Dr. Simpson. He had prepared a scholarly lecture on the history of the Abbey, and was able to impart his knowledge of the structure to members when he escorted the party over the buildings and ruins. Afterwards he led a discussion on the numerous points of interest.

The Abbey was founded early in the 10th century for Benedictine Nuns. Most of the Conventual buildings are gone, but examples of work from the 11th to 16th centuries exist in the different parts of the tower; nave with triforium and clerestory and choir, both with their aisles; both transepts; and traces of the Lady Chapel.

St. Margaret's Chipstead, Surrey.—Visited October 3rd, 1925.

Our former visit was in 1922, but a record was not made then as now. This large church stands some 500 ft. above, and a little way from the main Brighton road. It is cruciform, having north and south transepts. The nave has aisles, the tower is central and the chancel is aisle-less. There is a south porch.

In the modern aisle to the north of the nave is a rebuilt door of Norman workmanship. In other parts of the church work of the 13th and 15th centuries is to be found.

The triangular-headed windows to the chancel are probably unique, and, though of the 13th century, strongly suggest Saxon tradition.

Westminster Abbey.—Visited November 7th, 1925.

We made a second tour round unknown Westminster Abbey under the guidance of Mr. Molesworth Roberts. The Rev. Cannon Vernon Storr, M.A., kindly showed us over his house in Dean's Yard, including his hall in the cellarer's range, an upper room containing unique frescoes of Italian type between the timbering, and the remains of the misericorde in an out-building. The school dining room, originally abbot's refectory, was next visited by courtesy of the headmaster, with its original louvre in roof, dais, and musician's gallery over the "screens." The features of the four walks of the great cloister were explained, including the north walk or monastic library, and the west walk or novice's school. The party finally descended, by courtesy of the custodian and Dean's Verger, to the chapter house crypt, with hollow central pier and remains of an altar. Thanks were accorded to the authorities for facilities of access and to Mr. Molesworth Roberts for the great trouble he had taken in making our afternoon so intensely interesting.

H. SPENCER STOWELL, *Recorder.*

PAPERS READ TO THE SOCIETY

January 6th.—“Spiders,” by E. C. Ash.

February 3rd.—Annual Exhibition.

“Oak Galls of the Cynipidae,” J. Ross.

“Birds,” by Miss Best.

“Churches,” by R. Marshman Wattson.

“Moths and a Few Plants,” by J. W. Colthrup.

February 17th.—“The Birds of Lundy,” by Capt. R. W. Lloyd,
M.B.O.U.

March 3rd.—“The Zoo Aquarium,” by P. W. Horn.

March 17th.—“Architecture and Life,” by H. V. Molesworth Roberts.

April 21st.—Bacot Memorial Evening. “The Use of Photography in
Entomology: A Practical Exposition,” by H. Main, B.Sc.,
F.Z.S.

May 5th.—“A Botanical Holiday at the Lizard in June,” by E. B.
Bishop.

May 19th.—“Luminosity in Nature,” by R. W. Pethen.

September 15th.—“Early Christian and Byzantine Art,” by A. R.
Martin.

October 6th.—Exhibition of Botanical Slides, by A. W. Dennis.

October 20th.—“Birds seen during the Oxford Expedition to
Spitzbergen,” by Niall Rankin, F.Z.S., M.B.O.U.

November 3rd.—“Notes on the Palaearctic Accipitres,” by H. Kirke
Swann, F.Z.S., M.B.O.U.

December 1st.—Annual General Meeting. President’s Address.

December 15th.—“The Increase in Melanism in the last Half-
Century,” by A. W. Mera.

THE BIRDS OF THE SHETLAND ISLANDS

A Sketch

By. W. E. GLEGG. F.Z.S., M.B.O.U.

THE map of the Shetland Islands, which form the northernmost limit of the British Islands, reveals the striking irregularity of their coast-line. This feature is so markedly pronounced that no portion of these wild and rugged islands is more than four miles distant from the sea. Consequently, so exposed are they to the high winds which sweep the ocean, that the islands are almost constantly subjected to a spray of salt water. That these conditions exert a powerful influence on the type and number of the birds of these outliers of the islands of Scotland, is apparent. Shetland's vegetation is scanty indeed; although stunted bushes may be found behind sheltering walls, the islands may be described as treeless.

We can see the relation between the irregularity of the coast and the limited number of species which may be found during the nesting season. During the course of the writer's two visits of a month each in the nesting seasons of 1922 and 1923, a matter of fifty different kinds of birds were identified, a number which could be exceeded in one day in the south of England. This number does not include all the nesting birds of Shetland, but the comparison serves to illustrate that the avifauna is of a restricted and somewhat specialised type. Naturally those birds which require the shelter of bushes and trees, while rearing their young, are almost entirely absent. Well does the writer, when on his journey southwards, remember the surprising effect of a Redbreast's song, which floated to his ears, while viewing the country from the top of the tower of the noble cathedral of Kirkwall, the chief town of the Orkneys. This abundant British bird was never met with on the more northerly group of islands. Although the notes of the Blackbird may be occasionally heard, the Shetlander has little bird-song to lighten the seclusion of his life. The only bird which has a good song and is common is the Sky-Lark, which is held in much veneration by the people, the nest being considered sacred. The following traditional lines are used as a curse on anyone molesting the lark's nest:

“ My malediction stick to dee
As tar sticks to the tree
And spread ower dee
As butter spreads ower bread.”

The correlation between the character of the coast and the bird-

life can be traced a step farther, for the scarcity of birds of prey is to an extent controlled by the absence of their natural prey, the smaller birds. Only three species of this type of bird came under the notice of the writer and none of these was common. The fierce Peregrine was occasionally disturbed from the cliffs of some of the grand headlands, which here and there thrust themselves into the sea. That dashing little bird, the Merlin, the smallest hawk found in the British Isles, takes heavy toll of the Pipits and Twites which inhabit the moor on which it rears its young. The Kestrel, which makes its nest on the cliffs, is even scarcer than its congeners and is rarely seen.

Let us turn from the negative to the positive view, and we shall see that Shetland is fully compensated for its lack of perching birds, and that it possesses ornithological features which are of especial interest to the student of bird-life.

The most abundant bird is the gull. Most of the visitors make for the grey capital, Lerwick, and whether interested or not their attention will be compelled by the extraordinary number of the genus *Larus* present, for it is along the shores of this magnificent natural harbour that the gulls may be found in greatest abundance. The attraction, no doubt, is the presence of the herring-fishing fleet. Every boat entering the harbour with her load of fish, has in her wake a long string of gulls ready to pounce down on any fish which may be thrown overboard. Great white patches standing out on the dark peaty slopes are gulls, but the largest gatherings are to be found along the shore between the fishing stations. These birds are almost domesticated in the town and boldly frequent the streets, picking up refuse, regardless of the passer-by.

Six different species of gull nest among the islands, and colonies of all may be found not far from Lerwick. The remarkable little island of Noss, to the east of the town, serves as a nesting retreat for five of these. The Common and Lesser Black-backed Gulls lay their eggs openly on the grassy slopes, the Herring Gull and Kittiwake adopt the rugged cliffs, and the Great Black-backed warily retires to the inaccessible Holm of Noss. The Black-headed, nests almost within the confines of the borough, on the little Loch Clickhimin. But wherever you go in Shetland you find the gulls. The noisy Kittiwake is probably the most numerous; the numbers which may be seen amid the grand cliff scenery of the Burrafirth, on the north of Unst, are especially noteworthy.

More of this little island of Noss, for it is one of the sights of Shetland. At its western side it is only a few feet above sea-level, but at the east it terminates in a magnificent cliff with a sheer drop of six hundred feet. Gazing down from the dizzy heights of the Noup, as it is called, on the myriads of birds, in the immensity of the space flitting about like so many insects, the sight is deeply impressive. Later with the assistance of a motor-boat, a visit was made to the foot of the Noup, and it must be confessed that the natives are not unjustified in claiming that the true wonders of Noss can only be seen from below. Every ledge of this huge cliff-face was crammed with its countless tenantry of Kittiwakes and Guillemots.

All the features of this remarkable island cannot be dealt with here, but there are two species, the Great and Arctic Skuas, which, on account of their outstanding interest, must be mentioned. There is no more striking feature of the bird-life than these two predatory species. In many respects both birds are similar. During the nesting period both are gregarious, and their nests and eggs resemble those of gulls, but the nests are not placed so close together as in a gullery, in fact the space between two skuas' nests would be sufficient for a fair-sized gullery. A remarkable character, which is common to both Skuas, is the method of obtaining food at the expense of other birds, such as Gulls, Terns, etc., which, when chased by the relentless Skua, in their terror, disgorge the newly obtained food, which is then seized in mid-air by the attacker. However, the Skua can also forage for himself.

The behaviour of the Skuas at the nest is very different. The Arctic is very noisy and equally active, and he boldly attacks the intruder. The writer has been struck repeatedly by this bird, but always from behind. The Great Skua or Bonxie, as the Shetlanders call it, acts differently. It may be seen floating lazily and silently over its nest, but the presence of a human being in the vicinity galvanizes it into activity. The attack of the Bonxie is something to be remembered. The bird swoops down to the ground ahead of the intruder, turns, and flies straight at his face, gathering velocity as it comes. Instinctively the attacked, when the bird gets near, raises the hands to ward off the coming blow. The Bonxie abruptly checks his flight, at the same time thrusting out his feet, and then rises over the head of the intruder. The writer has been the subject of many such attacks but was never struck; those who have been, liken the blow to that which might be received by having a brick thrown at them.

To see the Skuas in their chief fastness we must leave Noss behind and sail in the little steamer to the island of Unst, the most northerly of the group. This island at the north terminates in the remote and exceedingly wild headland of Herma Ness. Here a hundred pairs of Great and well over two hundred pairs of Arctic Skuas nest annually. But these fine birds were not always so numerous; thirty-five years ago the Bonxie was almost extinct, and then Henry Edwardson was appointed as watcher, and to-day is still carrying out his duties. Every year on the advent of the nesting season he repairs to his hut, specially erected for him on this wild Shetland headland, far from human habitation. Edwardson claims that a particular pair of Arctic Skuas have been known to him for over thirty years, and that they place their nest in the same position every year, near the hut. Both these birds will come boldly to the door of the hut, to be fed with bread or biscuit, fish-eaters though they are. This has been witnessed by the writer.

The Great Skua is the monarch of all the Shetland birds. This is demonstrated at its two main nesting homes, Noss and Herma Ness. In both cases the physical features are similar; a confined area rises rapidly and culminates in a sharp drop. At both places the Great Skua has seized the highest ground for his nesting operations, while

the Arctic Skua occupies the zone immediately below. Even the noble Sea Eagle, which had its last British home in these islands, treated the Bonxie with respect.

There is much of interest at the wild Herma Ness, and from its summit the jagged rocks of the Muckle Flugga will be viewed with interest. This is the extreme northerly point of the British Isles, and birds innumerable flit to and fro, none perhaps more noticeable than the curious Puffin. With the aid of a telescope it will be seen that the summit of the rock is crowded with Gannets sitting on their nests. But this interesting bird is quite a newcomer, for it nested in Shetland for the first time in 1915, at the Noup of Noss, and five years later it made its nest at the north of Unst. Of the additions to the bird population the most remarkable is the Fulmar Petrel, which may be found in numbers wherever there are suitable cliffs for nesting purposes, but this bird is spreading all over Britain.

A prominent feature of the Shetland landscape are the many lochs, often occurring in chains. These series of lochs were in quite recent times, perhaps even to-day, used as a means of travelling through the islands, for, as the lochs are separated by narrow bars of land, the boats could easily be transferred from one loch to another. There can be little doubt that these lochs were at one time voes, which have been separated from the sea by sand bars driven up by the waves. The work of the bird-man in the Shetlands would be incomplete without a visit to some of these lochs. They are the haunt of many waterfowl of which that handsome saw-bill, the Red-breasted Merganser, and the Red-throated Diver or Rain-Goose, as it is called in Shetland, are perhaps the most attractive. The name of Rain-Goose is given to the Diver because its call is supposed to indicate the approach of rain. Even in the past this bird would seem to have had some hold on the imagination of the islanders, for Loch Lumbister, one of the larger sheets of water, derives its name from the Norse word for the Diver, looma. It may be that the Rain-Goose has altered its habits, but to-day the nest is almost invariably found at the side of a small tarn and not on the lochs of the size of Lumbister. Another interesting feature of the Diver's nesting habits is that a tarn rarely, if ever, shelters more than one nest.

In many cases bogs of varying size will be found between the foot of one loch and the head of another. It is in such places that we must seek one of the rarest and perhaps the most beautiful of the birds of the islands, the Red-necked Phalarope. A matter of six colonies of this species are known to the writer, but they are all small, in some cases only one or two pairs being found. Small as the Phalarope is, it may be seen at the head of the lochs buoyantly riding waves, which, surely, must engulf it. Here it is found most confiding and could be photographed without the aid of any hide. To the ornithologist, the Phalarope is of special interest, as it is one of the few species of which the female possesses the more handsome dress and the male carries out all the duties of incubation and rearing the young.

The greater part of the surface of the islands is composed of moorlands, but the islands vary somewhat. Yell possesses a much deeper bed of peat than any other, and it may be that one author, who likened the moors of Shetland to the Siberian tundras, may have had this island in view. Fetlar, on the other hand, is said to derive its name from its fertility; it would be more appropriate to say lack of barrenness. These lonely moors have their own birds. The wailing call of the Curlew soon announces trespass on his territory, and his protest may be supported by the tittering call of his less numerous cousin, the Whimbrel. The plaintive call of the Golden Plover heightens the loneliness of the heather-clad peat slopes, and many Dunlin and Snipe make their nests here.

Reviewing the main aspects of the bird-life broadly, it may be said that predatory types predominate. Apart from the two rapidly increasing Skuas, most of the gulls must be placed in this category, and the more defenceless birds have two other formidable enemies in the rapacious Raven and Hooded Crow. These scavengers do great damage among the eggs of such birds as Whimbrel, Red-throated Diver and Eider Duck, although there are still many of the last named nesting throughout the islands. The reduction of the number of Whimbrels is the most serious case as this was always a rare British bird.

This is merely an outline of the birds, for there are many which could be mentioned. On account of the high winds, which tear across the islands, very often accompanied by heavy rain, the study and photography of birds is not easy, but those who are prepared to face these difficulties will not be unrewarded by a visit to the Shetland Islands.

THE LIBRARY

The number of volumes added to the library since the issue of the printed catalogue in February, 1915, to date, appears to be 157. This total includes 91 volumes forming the Nicholson Bequest.

The additions are classified as follows:—Archaeology, 2; Biology, 11; Botany, 126; General Nat. History, 4; Ornithology, 9; and Topography, 5.

There is an addition of 74 MSS. under the following headings:—Archaeology, 32; Botany, 6; Conchology, 1; Entomology, 27; Geology, 1; Miscellaneous, 3; and Ornithology, 4.

Of Pamphlets, 48 have been added in the same period, classified as follows:—Archaeology, 5; Botany, 9; Entomology, 17; Geology, 7; Miscellaneous, 4; and Ornithology, 6.

7 Museum Guides have been added to the collection of same, while various volumes and parts of Magazines and Periodicals have been added to the library from time to time.

According to the register, the small total of 25 books and MSS. were issued in 1925, compared with 16 in 1924 and 19 in 1923.

ROBT. W. PETHEN.

REPORTS FOR THE YEAR

THE COUNCIL

IT is with some degree of satisfaction that the Council makes its annual report on the affairs of the society during the current year.

As, on the grounds of economy, the custom of previous years will be followed and no balance sheet printed, brief reference is made here to the condition of the finances. The total income for general purposes amounts to £50 6s., and our expenses to £41 9s. 5d., leaving with a sum of £17 2s. 10d. brought forward from the previous year, a credit balance of £25 19s. 5d. The Life Composition Account has risen from £20 to £25, and, although there is still a debtor balance on the "London Naturalist" Account of £17 18s. 5½d., it is less than in the previous year. This all round improvement in the finances is the result of an increasing membership and strict economy.

The membership list, in spite of the inevitable amount of attrition, has made healthy progress. We have lost, from various causes, during the year, eight members, seven branch associates and one country associate. Against these losses we have gained, twenty-one members, four branch associates, and one country associate. It will be seen from these figures, taken altogether, that there is a balance on the right side. Remembering that the average number of members admitted annually during the previous five years, was eleven, the present year's total of twenty-one is encouraging. Good as the figure is, our efforts must be continued undiminished not merely to maintain this rate of progress but even to accelerate it.

The attendances at Winchester House continue to flourish. During the past six years each year has shown an advance on its predecessor. For 1920 the average per meeting was 20, this year it has risen to the respectable figure of 38·8, an increase of 18·8. During 1920 the attendance in the aggregate amounted to 201. of which figure 11% was represented by visitors. The aggregate attendance in the present year totalled 544, visitors accounting for 28·8% of this figure. If this year's average attendance of 38·8 be considered in relation to the membership, it will be seen that it represents 29% of the names on our books. However, actually 60 members have attended at some time or other, and on effecting a similar comparison with this figure we find it equals 45·1%.

Early this year a new committee, to be known as the Ramblers' Committee, was formed with the object of providing field meetings of general interest. A successful series of these meetings has been held under the aegis of this organisation. This committee has been granted permission by the Council to develop into a section, and in future will be known as the Ramblers' Section

The programme which has been provided for the meetings at Winchester House has been well up to, if not in advance of, the usual standard. A heavy list of field meetings has again been successfully carried through. The adherents of the various sections have been well catered for in this respect, as no less than forty such meetings have been held during the course of the year. Of other activities of the society, it must be mentioned that Mrs. W. Boyd Watt acted as delegate to the Annual Congress of the South-Eastern Union of Scientific Societies; Mr. L. B. Prout represented us at the International Congress of Entomology, held at Zurich; and Messrs. Robbins and Glegg visited Bishops Stortford College to judge the exhibits at the annual natural history competition.

The Chingford Branch has held its usual series of meetings under the guidance of Mr. E. Samuelson. The Branch has suffered a severe loss by the death of Mr. A. G. Hubbard, who for five years held very worthily the position of chairman. The Council wishes to place on record an appreciation of Mr. Hubbard's valuable services and of the respect in which he was held by the members. The branch is to be congratulated on having obtained the services of the Rev. H. J. Gamble, as chairman.

After six years' service, Mr. W. E. Glegg has resigned the position of general secretary. The society has been very fortunate in securing the services of Mr. J. P. Hardiman to fill this position.

Judged by an annual comparison the progress of the society may not stand out very boldly, but if a retrospective view be taken of the past few years, it will be clear that we have not been standing still, and that there exists in our midst an atmosphere of confidence, which was at one time all too lacking in our work. The growth, which has taken place, should serve as a foundation for an accelerated rate of improvement in the future.

WILLIAM E. GLEGG, *Hon. Sec.*

NOTE

THE Council desire to place on record their high appreciation of the valuable services Mr. W. E. Glegg has rendered to the society during the six years he has held the important office of general secretary. When Mr. Glegg accepted the post of honorary secretary, the prospects of the society, after the strain and reaction of the war, were far from encouraging; but by his untiring energy and enthusiasm, his invariable tact and courtesy, obstacles have been overcome, keenness has been again evoked, and the present hopeful outlook steadily built up. Fortunately Mr. Glegg's advice and experience will still be available as a member of the Council, and for the guidance of his successor Mr. Hardiman.

S. AUSTIN, *President.*

ORNITHOLOGICAL SECTION

THE following members were elected to form the committee for 1926 :—Chairman, J. E. S. Dallas ; Secretary, S. G. Poock ; Recorder, A. Brown ; Members of Committee, S. Austin, C. S. Bayne, P. J. Hanson, and Miss H. Watkins. Mr. J. E. S. Dallas was again elected to represent the Section on the Publication Committee, and Mr. C. S. Bayne to represent it on the Publicity Committee of the Royal Society for the Protection of Birds.

The section provided the following papers for the society's syllabus, which were read at central meetings :—February 17th, "The Birds of Lundy," by Capt. L. R. W. Loyd, M.B.O.U. ; November 3rd, "Notes on the Palaearctic Accipitres," by Mr. H. Kirke Swann, F.Z.S., M.B.O.U.

SECTIONAL MEETINGS

Three sectional meetings were held, at which the following papers were read :—January 20th, "The Preparation and Storage of Birdskins," by Mr. P. W. Horn ; April 7th, "The Gannets of Grassholm," by Miss Hibbert Ware, F.L.S.

On September 1st the society's oölogical collections were exhibited. At the Chingford Branch of the society an ornithological lecture was delivered on February 9th on "Birds of the Shetland Islands," by W. E. Glegg, F.Z.S., M.B.O.U.

On January 10th, the members of the section visited the Ornithological Department of the British Museum, Mr. N. B. Kinnear, C.M.Z.S., M.B.O.U., indicating especially types in the different plumages of the British gulls.

The programme of monthly field meetings was successfully carried through, visits being made to the following districts :—Dorking, Kentish Marshes, Essex Marshes, Epping Forest, Wisley Common, Ivinghoe, Passingford, Rainham (Kent), Essex Marshes, Bricket Wood, Virginia Water, and Navestock. The average attendance at these meetings, since their inception, has been :—1920, 7·4 ; 1921, 6·8 ; 1922, 8·8 ; 1923, 11·0 ; 1924, 9·3 ; 1925, 10·16.

As an experiment, during the year of report some week-day afternoon walks were organized, Richmond Park and the northern and southern portions of Epping Forest being the localities visited. The section visited the Heronry in Wanstead Park, through the courtesy of Mr. T. F. McKenzie, superintendent of Epping Forest ; and the Brent Valley Bird Sanctuary, through the courtesy of the Selborne Society.

The committee held four meetings during the year.

RINGING AND COLLECTIONS

The section sent in 203 schedules under the "British Birds" Marking Scheme, the work being materially helped by our correspondent, Miss F. Collins. The recovery of one marked bird was reported, a Common Tern, ringed by Mr. W. E. Glegg in the

Camargue (Bouches du Rhône) on June 16th, being recovered later in the year in the Salin de Giraud in the same Department.

The photographic collection now numbers 158 sheets, 15 fresh sheets having been added during the year as follows:—4 of the Black-winged Stilt, 2 of the Kentish Plover, 1 of the Nightjar, sitting, 1 of the eggs of the Nightjar, 1 of a larva of the Redbacked Shrike, 5 of Australian birds (Coachwhip Bird, Emu, Goldfinch, Black Swan, and Satin Bower Bird), 1 of the Great Crested Grebe, and nest.

The following eggs were kindly presented by Mr. R. B. Lodge; Black Kite, Pelican, Squacco Heron, and Night Heron.

Twelve new members of the society joined the section during the year, *viz.*:—Messrs. R. S. Archbould, E. Bidwell, S. Boardman, W. C. Cocksedge, Miss F. Collins, Messrs. H. B. Fulford, C. Hart, W. A. Mancell, Cecil Norman, L. Parmenter, S. G. Pooch, and Mrs. Boyd Watt. The section deeply deplore the loss, through a fatal motor-car accident, of Mr. H. B. Fulford, an active member of the section and of the Chingford Branch.

As in past years, the thanks of the section are owed to numerous correspondents who have furnished notes and records.

[Mr. J. P. Hardiman, after two years service, has resigned the position of secretary. While regretfully accepting his resignation, the section wishes to record its indebtedness to Mr. Hardiman for the valuable results achieved by him during his term of office. Mr. S. G. Pooch has consented to fill the vacancy thus created].

In what follows all dates are in 1925, except where otherwise specified.

NEW SPECIES

Two species new to the society's district have been recorded making the total number 179. These new occurrences were:—*Acrocephalus palustris* (Bechstein) (MARSH-WARBLE), June 5th, 1924, seen and heard singing at the Long Water, Kensington Gardens, reported by H. G. Alexander, in "British Birds," vol. 18, p. 242. *Sterna a. albifrons* (Pallas) (LITTLE TERN), September 22nd, 3 adult and one immature birds were under observation for an hour or more (sometimes at close range) at Staines Reservoir, reported by J. P. Hardiman.

INTERESTING RECORDS

Other interesting records for the year are as follows:—*Corvus c. cornix* (Linnaeus) HOODED CROW, February 20th, on Wimbledon Common, reported by Capt. H. T. S. Stoneham (see "British Birds," vol. 18, p. 302). October 29th, seen on mud flats of the Thames at low tide, at Lonsdale Road, Barnes, reported by Miss H. Watkins. *Acanthis l. linaria* (Linnaeus) MEALY REDPOLL, March 29th, Hampstead Heath, on alders, reported by Bertram Lloyd (see "British Birds," vol. 19, p. 22). *Emberiza c. calandra* (Linnaeus), CORN BUNTING, May 4th and 10th, Staines Reservoir, reported by J. P. Hardiman and A. Holte Macpherson. *Motacilla a. alba* (Linnaeus), WHITE WAGTAIL, April 18th, at Barnes, reported by A. Holte Macpherson (see

"The Field," April 30th). *Motacilla c. cinerea* (Tunstall), GREY WAGTAIL, December 20th, 1924, near Bushey, reported by L. J. Tremayne; December 25th, 1924, Holly Hill Farm, Enfield, reported by H. Sagar; March 7th, King George Reservoir (1); October 3rd (several), 10th (1), and 24th (1), at Walthamstow Reservoirs, reported by W. E. Glegg; November 18th (1), December 5th (1), and 13th (3) at Barnes Reservoirs, reported by J. P. Hardiman and A. Holte Macpherson. *Anthus spinoletta petrosus* (Montagu), ROCK-PIPER, September 22nd, Staines Reservoir, reported by J. P. Hardiman. *Regulus r. angulorum* (Hartert), BRITISH GOLDCREST. In 1921 a pair bred successfully in a garden in Loughton, very close to the Forest, reported by C. S. Baker, per W. E. Glegg. *Savicola r. rubetra* (Linnæus), WHINCHAT, May 10th, at Staines, reported by A. Holte Macpherson. *Micropus a. apus* (Linnæus), SWIFT, April 18th (early date) Walthamstow Reservoir, reported by W. E. Glegg. *Carine noctua mira* (Witherby), LITTLE OWL, October 24th, Walthamstow Reservoirs, reported by W. E. Glegg. *Buteo b. buteo* (Linnæus), BUZZARD, October 3rd, seen passing over Epsom Downs, reported by Howard Bentham (see "British Birds," vol. 19, p. 211). *Falco p. peregrinus* (Tunstall), PEREGRINE FALCON, October 25th, seen soaring over Epsom Downs, reported by Howard Bentham (see "British Birds," vol. 19, p. 211). *Phalacrocorax c. carbo* (Linnæus), CORMORANT, October 3rd-24th, Walthamstow Reservoirs, reported by W. E. Glegg; November 28th, Staines Reservoirs, A. Holte Macpherson. *Mareca penelope* (Linnæus), WIGEON, March 7th (20), King George Reservoir; September 12th (11), Walthamstow Reservoirs, both reported by W. E. Glegg; April 3rd (many) and May 4th (6), Staines Reservoir, December 5th (a few), Barnes Reservoir, all reported by J. P. Hardiman; May 3rd, Staines, June 13th, Barn Elms, and December 5th (2), Lonsdale Road Reservoir, all reported by A. Holte Macpherson. *Spatula clypeata* (Linnæus), SHOVELER, March 7th (6 or 7) and May 3rd, Staines Reservoir, both reported by A. H. Macpherson; November 23rd (6), Staines Reservoir, reported by Donald Gunn, per A. H. M.; April 3rd (pair) and May 4th (7), Staines Reservoirs, both reported by J. P. Hardiman; September 12th (2), Walthamstow Reservoir, reported by W. E. Glegg; October 17th (pair), Highgate Ponds, reported by Mrs. H. Boyd-Watt. *Dasila a. acuta* (Linnæus), PINTAIL, September 12th, Walthamstow Reservoirs, reported by W. E. Glegg. *Nyroca f. ferina* (Linnæus), POCHARD, observed from November 21st to December 13th in flocks, ranging from 300 to 500 and more, on Barnes Reservoir, reported by Messrs. A. H. Macpherson, Donald Gunn and J. P. Hardiman. *Nyroca m. marila* (Linnæus), SCAUP, April 4th, May 16th, June 1st, August 9th-15th (♂), Walthamstow Reservoirs, reported by W. E. Glegg and R. W. Pethen; December 3rd, 1924 (♂), Staines Reservoir, reported by J. W. Castle, per A. H. M.; January 24th (♀ or young), Barn Elms Reservoir, reported by A. Holte Macpherson; October 14th (♀ or young), Staines Reservoir, reported by Donald Gunn, per A. H. M.; December 2nd (1), Brent Reservoir, reported by J. P. Hardiman.

Nyroca fuligula (Linnæus), TUFTED DUCK, reported by A. Holte Macpherson as having bred in Kensington Gardens, Regents Park, St. James's Park, Barn Elms Reservoir, and in grounds of Buckingham Palace (per Harold Russell). *Glauclionetta c. clangula* (Linnæus), GOLDEN EYE, Staines Reservoir, December 26th, 1924 (many, chiefly ♂'s), March 7th (4 or 5), March 16th (20 or 30), March 29th, April 3rd (7), October 14th, reported by Messrs. W. E. Glegg, Donald Gunn, J. P. Hardiman, and A. H. Macpherson; Barn Elms Reservoir (♀) February 21st, reported by A. Holte Macpherson; near Watford, October 28th, reported by J. P. Hardiman; Barnes Reservoir, November 18th (1), December 5th (4 including one old ♂), 13th (2), 27th (3), reported by A. Holte Macpherson and J. P. Hardiman. *Mergus m. merganser* (Linnæus), GOOSANDER, recorded at Staines Reservoir from December 13th, 1924-March 29th (numbers varying from 1 to 5), and from November 28th-December 13th (numbers varying from 6-40, the greatest number of old males seen at one time being 7), reported by Messrs. A. Holte Macpherson, W. E. Glegg and J. P. Hardiman. Also recorded at Barnes Reservoir from November 17th-December 27th (numbers varying from 3-6, no old males among them), reported by Messrs. A. Holte Macpherson, Donald Gunn, J. P. Hardiman, and Major Dankes. *Mergellus albellus* (Linnæus), SMEW, species still increasing. Recorded at Walthamstow Reservoirs by W. E. Glegg from January 3rd-February 28th; at the Barnes Reservoirs, by Messrs. A. Holte Macpherson, J. P. Hardiman and Major Dankes, from January 31st-March 28th (greatest number at one time being 14) and from November 28th-December 27th (greatest number 48); and at Staines Reservoir by W. E. Glegg on December 26th (1924) and by A. Holte Macpherson on December 26th (1925). *Scolopax r. rusticola* (Linnæus), WOODCOCK. Holly Hill Farm, Enfield, recorded by H. Sagar on December 24th and 26th, 1924, and January 13th, and by P. J. Hanson on March 22nd. *Lymnocyrtus minimus* (Brünnich), JACK SNipe, January 8th, at Brent Reservoir, by J. P. Hardiman. *Erolia a. alpina* (Linnæus), DUNLIN, at Barnes Reservoirs on July 28th, 29th (2), August 15th and December 13th, reported by Messrs. A. Holte Macpherson, Donald Gunn, J. P. Hardiman and Major Dankes; at Staines Reservoir (2), reported by A. Holte Macpherson; and at Walthamstow Reservoirs on August 29th (7), reported by W. E. Glegg. *Tringa nebularia* (Gunnerus), GREENSHANK, August 15th, at Barn Elms Reservoir, reported by A. Holte Macpherson; August 29th, at Walthamstow Reservoirs, reported by W. E. Glegg. *Tringa hypoleucos* (Linnæus), COMMON SANDPIPER, remarkably numerous in July and August. Recorded from Walthamstow, Barn Elms and Staines Reservoirs. One seen flying across the Serpentine on August 7th, by A. Holte Macpherson. *Tringa ochropus* (Linnæus), GREEN SANDPIPER, October 18th, at King George Reservoir and October 25th, near Watford, both reported by J. P. Hardiman. *Numenius p. phaeopus* (Linnæus), WHIMBREL, May 3rd, one heard at Staines Reservoir, reported by Messrs. A. Holte Macpherson and J. P. Hardiman. *Pluvialis apricarius* (Linnæus), GOLDEN PLOVER, October 25th (20),

Staines Reservoir, reported by Donald Gunn, per A. Holte Macpherson. *Charadrius h. hiaticula* (Linnæus), RINGED PLOVER, May 10th, Staines Reservoir, reported by A. Holte Macpherson. *Larus marinus* (Linnæus), GREATER BLACK-BACKED GULL, December 27th, one adult at Barnes Reservoir, reported by A. Holte Macpherson. *Larus f. fuscus* (Linnæus) LESSER BLACK-BACKED GULL, February 10th, 1924, one seen on Walthamstow Reservoirs, reported by R. W. Pethen; July 12th (1), July 22nd (3), and July 29th (12) (a wonderful group in all stages of plumage) at Barn Elms Reservoir; October 31st (6), at Barnes Reservoir; December 12th (6), at Staines Reservoir; all reported by A. Holte Macpherson. *Sterna h. hirundo* (Linnæus), COMMON TERN, March 9th, 1924 (9), Walthamstow Reservoirs, reported by Miss A. Hibbert-Ware (see "Essex Naturalist," vol. 21, p. 132); July 26th and August 23rd, Staines Reservoir, reported by A. Holte Macpherson. *Colymbus stellatus* (Pontoppidan), RED-THROATED DIVER, November 15th, 1924, Walthamstow Reservoirs, reported by W. E. Glegg. *Podiceps auritus* (Linnæus), SLAVONIAN GREBE, October 12th, November 17th, December 12th, 19th, and 26th, Staines Reservoir, reported by Messrs. A. Holte Macpherson and Donald Gunn.

EPPING FOREST REPORT

The present report confines itself to a statement of new and interesting occurrences and is supplementary to those which appeared in the "London Naturalist" for the years 1923 and 1924.

One new species is as follows:—*Buteo b. buteo* (Linnæus), BUZZARD. One was observed on March 12th, 1924, at Gilwell Park, Sewardstone; reported by Miss A. Hibbert-Ware. On March 15th, one flew over Yardley Hill, into Bury Wood; reported by Mr. G. L. Bruce, per Miss A. Hibbert-Ware (see "Essex Naturalist," Vol. 21, p. 132).

Other interesting records are as follows;—*Fringilla montifringilla* (Linnæus), BRAMBLING. One seen in Hill Wood on January 1st, and were numerous on March 1st and 8th: none seen after March 15th; it is worth noting that these birds pass through the Forest on their return to the north; reported by S. Austin and W. E. Glegg. *Saxicola r. rubetra* (Linnæus), WHINCHAT. Mr. R. D. Hayward, per S. Austin, reported that he found on June 11th, on Fairmead, a nest containing 6 eggs, and that in due time these were all successfully hatched out. *Accipiter n. nisus* (Linnæus), SPARROW-HAWK. Mr. Stuart Boardman sends the following notes concerning a pair of this species which nested in the Forest:—

"In 1923 they built their nest about 40 feet up in a silver birch and reared three young; in 1924 they again used a silver birch (some 50 yards distant from the previous nesting-tree) and reared four young. This year I was unable to find the nest until after the young had flown; it was this time built in an oak tree some 50 yards distant from the two previous nesting trees. At the foot of the oak I found a broken Sparrowhawk's egg.

"In the centre of the triangle made by these three nesting-trees is

a log used as a slaughter-log; to this most of the hawk's victims are brought, where they are plucked before being taken to the nest. Thus in the breeding season the log and ground around are strewn with plucked feathers, wings, claws, etc.; on one occasion, in 1924, on the log alone there were some 1,800 freshly plucked feathers.

"From feathers picked up and carefully identified (for help in which work I am indebted to Mr. W. P. Horn) I have ascertained that this pair of Sparrowhawks have this season fed upon the following species of birds:—Blackbird, Meadow Pipit, Chaffinch, Missel Thrush, Great Tit, Redstart, Greenfinch, Starling, Hawfinch, Song Thrush, House Sparrow, Tawny Owl, Jay, Woodpigeon, Lesser Spotted Woodpecker, and Whitethroat, and I think it also probable that the Green Woodpecker and Little Owl may be added to this list.

"At a little distance from the slaughter-log mentioned, there is a decayed log containing ground beetles (*Abax striola*), and one may sometimes find upon it some half-dozen wing-cases of these beetles, which are also to be found in the hawks' pellets. Besides the usual feathers, claws, mouse fur, and tails, legs of beetles, etc., I have this year found in one pellet the remains, apparently, of a starling's egg.

"Possibly the most interesting incident I have witnessed in connection with this pair of birds was an attack upon a squirrel, which took place last year. I saw the hawk swoop down upon a brown squirrel (which was but a few feet away from me), and as it touched its intended victim, the squirrel gave a faint but shrill squeal. Being very unwilling to see the loss of a squirrel from the Forest, I immediately clapped my hands and was thus successful in frightening away the hawk and saving the squirrel's life."

Nyroca fuligula (Linnæus), TUFTED DUCK, April 5th, 2 ♂ and 2 ♀ on Highams Park Lake, reported by W. E. Glegg. In November, one on the "Green Man" Pond, very tame, coming to be fed with the swans; reported by Miss G. Lister per S. Austin. *Ardea c. cinerea* (Linnæus), HERON. Mr. J. P. Hardiman reported that he counted 46 nests at Wanstead Park on May 10th. *Scolopax r. rusticola* (Linnæus) WOODCOCK, November 11th, 1924, at Black Bushes, reported by Keeper Stubbs, per P. D. Hayward and S. Austin; October 18th, 1925, below Loughton Camp, reported by R. S. Archbould; in December near Connaught Water, reported by H. C. Playne, per S. Austin. *Capella g. gallinago* (Linnæus), COMMON SNIPE, April 26th, at north end of Forest, reported by J. P. Hardiman; November 12th, opposite "Wake Arms," reported by R. S. Archbould. *Tringa hypoleucos* (Linnæus), COMMON SANDPIPER, May 10th, in Wanstead Park, reported by J. P. Hardiman. *Vanellus vanellus* (Linnæus), LAPWING, Mr. J. Ross reported that he saw two at Long Running on April 14th, 1923. Mr. P. J. Hanson reported seeing one at Yardley Hill, on April 19th. *Podiceps r. ruficollis* (Pallas), LITTLE GREBE. In November, five were seen on the Eagle Pond; they appeared to be parents and chicks, reported by Miss G. Lister, per S. Austin. *Columba ænas* (Linnæus) STOCK-DOVE, April 26th, at north end of Forest, and May 10th, at Wanstead Park, both reported by J. P. Hardiman.

W. E. GLEGG, *Chairman.*

PLANT-GALLS SECTION

○ NE paper was read at the sectional meeting held on June 9th, when "Mites and their Galls" were discussed. Six expeditions were undertaken, the districts visited being—Bookham Common on May 24th; Epping Forest, June 14th; Esher, July 25th; Mickleham Downs and Box Hill, August 29th; Limpsfield, September 26th; and Claygate, October 31st.

The number of galls recorded on these outings amounted to 162, and included *Viola Riviniana*, Reichb., *f. villosa*, Neum., Wahlst., and Murb., galled by *Perrisia affinis*, Kieff., and by the fungus *Urocystis violae*, Sow.; *Vicia hirsuta*, Gray, galled by *Contarinia cracca*, Kieff.; *Peucedanum sativum*, Benth. and Hook, fil. leaflets folded upwards, the folds being occupied by yellow *Cecidomyid* larvae; *Ballota nigra*, Linn., galled by *Perrisia* sp.; *Salix repens*, Linn., galled by *Oligotrophus capreae*, Winn., and by *O. capreae*, Winn., var. *major*, Kieff.; *Populus tremula*, Linn., galled by *Harmandia globuli*, Rubs.; and *Betula tomentosa*, Reith. and Abel, galled by enlarged buds, apparently Dr. Houard's No. 6451.

Messrs. Bishop and R. W. Robbins paid critical attention to the species of *Rosa* met with and the galls of *Rhodites*, with the result that *Rhodites rosae*, Linn., was noted on *R. tomentosa*, Sm., *R. Eglanteria*, Huds., and *R. canina*, Linn., *Rh. eglanteriae*, Hartig, on *R. tomentosa*, *R. Eglanteria*, *R. canina*, *R. micrantha*, Sm., *R. dumetorum*, Thuill., and *Rh. rosarum*, Giraud., on *R. canina*, and *R. dumetorum*.

Individual observation resulted in a large number of notes, of which the more interesting perhaps were—*Eriophyes* curling the leaves of *Achillea Ptarmica*, Linn.; *Tylenchus devastatrix*, Kuhn., in the root-stock of *Pedicularis sylvatica*, Linn.; *Contarina lonicearum*, F. Low, and *C. riburui*, Kieff., on *Viburnum Lantana*, Linn.; *Trioza urticae*, Linn., on *Urtica dioica*, Linn.; *Eriophyes psilaspis*, Nal., on *Taxus baccata*, Linn., var. *adpressa*; *E. triradiatus*, Nal., on *Salix ritellina*, Linn., var. *pendula*; *R. geranii*, Can., on *Geranium lucidum*, Linn.; *Contarina tiliacum*, Kieff., on *Tilia cordata*, Mill.; *Clinodiplosi thalictricola*, Rubs., on *Thalictrum flavum*, Linn.; *Tylenchus devastatrix*, Kuhn., on stunted shoots of grass, probably *Anthoxanthum odoratum*, Linn.; *Asphondylia ulicis*, Verrall., on *Ulex Gallii*, Planch.; *Eriophyes* sp. (Houard, No. 1981?) on *Acer Pseudo-platanus*, Linn.; *Phyllocoptes anthobius*, Nal., on *Galium saxatile*, Linn.; *Rhodites spinosissimae*, Giraud, on *Rosa spinosissima*, Linn. (in London), *Andricus nudus*, Alder, on *Quercus pedunculata*, Ehrh. Also on *Q. pedunculata* margins of the leaves turned downwards into small crescentic folds each covering a deep yellow larva of a midge, not *Macrodiplosis dryobia*, F. Low. Possibly Houard's No. 1306a.

Spathogaster aprilinus, Giraud, was very abundant on the oaks in the early summer, and it was possible to carry out experiments which resulted in establishing the connection between these flies and the galls of *Neuroterus ostreus*, Giraud, details of which are published in "The Entomologist" for September. *Andricus testaceipes*, Hartig, seemed to

be more in evidence than usual, while on November 2nd, *N. lenticularis*, Oliv., was noted to be very abundant in Kew Gardens on *Quercus pedunculata* and also on other kinds of oak, though *Spathogaster baccarum*, Linn., had been scarce in the spring.

A feature of the year was the almost entire absence of the *Galium* galls, and also of *Perrisia urticae*, Perris.

H. J. BURKILL, *Hon. Sec. and Recorder.*

ARCHAEOLOGICAL SECTION

THREE sectional meetings were held during the year mainly devoted to the discussion of records. They were not well attended and it has been decided, with a view to making these meetings more popular, in future to include in the announcements of such meetings an "attractive item" as well as records.

Five Saturday excursions were held, *viz.*, Eynsford, Greenstead and Chipstead, of which records have been prepared, and two to Westminster Abbey. The week-end was to Romsey.

The membership is practically unaltered (increase of 1), but the attendances have, in some cases, been decidedly thin, for example, only 7 members attended the Chipstead meeting. In this connection it is to be hoped that the notice cards sent out with regard to the excursions may be more productive of attendance in future. Quite a large proportion of members have not been to any excursion at all.

A notable feature of this year's activities is that all the lectures, papers, etc., besides of course the work on the records, have been provided by members of the section. Mr. Molesworth Roberts gave an illustrated lecture on "Architecture and Life," led two visits to Westminster Abbey and opened the discussion on the Abbey at one of the sectional meetings. Mr. Martin gave an illustrated lecture on "Early Christian and Byzantine Art." Dr. Simpson was the leader at Romsey and read a paper on the Abbey, besides describing the building as he took us over it, and Mr. Wattson provided the ten minutes illustrated lecture at the annual exhibition.

The annual dinner, at the Comedy Restaurant, was the most successful and best attended the section has held, 33 members and friends being present. The guests of the evening were Mr. and Mrs. Glegg, and several members of other sections, notably the ornithological, attended.

W. C. FORSTER, *Secretary.*

RAMBLER'S SECTION

EARLY in 1925 a ramblers' committee was formed consisting of 5 members who organised rambles of varying character throughout the year. The movement met with such success that the committee was recognised as a "section" by the Council at the close of the year. It now numbers 19 members.

The rambles are held on the third Sunday in each month. They are of an informal character and take into account no one special branch of the society's activities, but keep in touch with all of them. Archaeology, botany, entomology, plant galls, and ornithology all have their turn, besides others such as pond life, conchology, etc., as occasions arise, and it is seldom that a ramble is held without at least one devotee of each of these studies accompanying it.

The arrangements for each ramble are in the hands absolutely of the leader of the day, so that an attractive diversity is maintained. So far, all rambles have started at a convenient hour, comfortable to all, from whatever quarter of London they may come, and it is probable that this feature will be maintained and become traditional. No special records are made officially, but many very useful notes have been obtained by individual ramblers. The section does not seek to attract members already active in other sections, but chiefly those who have a general (as distinct from particularized) interest in the study of natural history; at the same time it welcomes any specialists who care to come on its rambles, as so many points of enquirers can be elucidated by them on the spot as they arise.

Eleven rambles were held during 1925 at which the average attendance was a little over nine, the lowest being six, and the highest fourteen. They were all voted very enjoyable as well as profitable, and the section therefore desires to commend itself to those who are not attached to any section at present, and asks them to consider whether it would not be to their advantage and profit to join this organization. The section is represented on the Federation of Rambling Clubs, and on The Commons and Footpaths Preservation Society.

Four new members have already been attracted to the society through this section's agency, and it is hoped that it will be the means of introducing others. The programme for the forthcoming session is both varied and attractive. Visitors are always welcome; full details of each ramble being obtainable shortly beforehand on application to the secretary, Mr. L. J. Tremayne, Avenue House, Northumberland Avenue, W.C.2.

A. B. HORNBLLOWER, *Chairman.*

ENTOMOLOGICAL SECTION

THE successful formation of an entomological section to absorb the old lepidoptera section proved that there are several members interested in the different orders of insects, and there are signs of increased activity in the near future. Some members, however, who are reputed to be lepidopterists, have been more conspicuous by their absence than by their presence at the meetings, and we should be pleased if they could attend from time to time and so help on the work of the section.

The most important event of the year was the arrival of a collection of insects, chiefly lepidoptera and hymenoptera, bred by the late Mr.

Dowsett, and presented to the society by his son, Mr. F. A. Dowsett. Mr. R. W. Robbins has kindly undertaken the work of listing this collection, the insects of which are all in splendid condition.

On April 21st Mr. H. Main lectured to the society on "The Use of Photography in Entomology," and on December 15th Mr. A. W. Mera discussed "The Increase in Melanism in the Last Half Century." On February 17th Mr. Colthrup showed photographic slides of moths taken in their natural surroundings, while on November 17th Mr. R. W. Robbins dealt with "The Fritillaries" at a sectional meeting.

Mr. L. B. Prout represented the society at the Third International Congress of Entomology at Zurich, and furnished an interesting report of the proceedings there.

Among the more interesting exhibits at meetings have been the following:—

February 17th, *Corynetes caeruleus*, De G. (Coleop., Cleridae). The two specimens exhibited were found on a wooden pillar in Navestock church, Essex. The strange habitat for this reputedly necrophagous beetle is probably to be accounted for by the presence of *Xestobium* in the pillar, which was certainly none too sound. N. A. Kemner has recorded the larvae of *C. caeruleus* as living in the galleries of *Anobium striatum* in Sweden, (*Ent. Tidskr.*, XXXIV., p. 198, Stockholm, 1913.) J. C. Robbins.

March 3rd, *Grapta c-album*. A short series bred from pupae taken in a hop field in Herefordshire. Both types of underside were represented. *Epinephele hyperanthus* ab. *caeca*, Fuchs., Oxted, Surrey. *E. jurtina* (*janina*). A ♀ with the brown coloration wholly replaced by pinkish-fawn, the orange blotches being unaltered. Taken at Salcombe, S. Devon, by C. L. Collenette. R. W. Robins.

September 15th, *Lampyris noctiluca* (Glow Worm). Four larvae from a batch of eleven sent by Mr. Hugh Main, who had obtained them from a female taken in June in the south of France. Two queens of the common garden ant (*Lasius niger*) and two batches of eggs. R. W. Pethen.

October 6th. A short bred series of *Ennomos fuscautaria*. The ♀ was taken at light at Limpsfield on October 15th, 1924, and the first egg hatched May 28th. The brood contained larvae of two types, green and light brown, the former being more numerous. The colour difference was most noticeable in the last instar. The larvae, sleeved on ash, had all pupated by August 8th, and the moths emerged from 18th to 31st of that month. R. W. Robbins.

Cocoons of *Acronycta aceris*, L. (Lep. Noctuae), containing pupae cases of the moth and empty puparia of the parasite *Compsilura concinnata*, Mg. (Dipt., Tachinidae.) Also the bred adults of the latter. The *Acronycta* larvae were taken at South Kensington, August, 1924, and pupated in a few days. The *Compsilura* larvae doubtless fed up in the moth pupae during the winter, emerging in the spring to pupate inside the cocoons of the host. The flies emerged during the first half of June. Although *C. concinnata* has been recorded as a parasite of a large number of lepidoptera and several *Tenthredinidae*, it

is only able to pass the winter in a very small proportion of the species which may be regarded as primary hosts. In the case under consideration there would appear to be one or possibly two summer generations in a secondary host (which may, perhaps, be *Orygia antiqua*, L.). *C. concinnata* is of interest as being the most important of the parasites which have been introduced into the United States to combat the gipsy moth (*Porthetria dispar*, L.) and the brown-tail moth (*Nygmia phaeorrhoea*, Don.). It has spread widely and has been recorded from a number of native hosts, and produces three generations a year. A full account of the fly, by J. J. Culver, has been published by the U.S. Department of Agriculture. (Bulletin, No. 766, Washington, 1919). J. C. Robbins.

October 20th, *Meconema thalassinum*, De G. (Orthoptera, Locustidae). The female exhibited was taken on the trunk of a pine (*Pinus sylvestris*, L.) at Limpsfield Chart, Surrey, about 7 p.m. on October 17th. A short distance away another was seen ovipositing in a pine trunk about 5 feet from the ground. W. J. Lucas does not record pine as a food plant in his account of this species (*British Orthoptera*, pp. 189-193, London, Ray Society, 1920). R. W. & J. C. Robbins.

November 3rd, *Epirrita* (*Oporabia*) *dilutaria* and *E. autumnaria*. Series from S.E. Surrey. There was considerable variety in depth of colour, the lightest being among the *E. autumnaria*, which in general were also distinguished by larger size and different shape due to the more prolonged forewings. R. W. Robbins.

Six field meetings were held in the neighbourhood of London, but the weather was mostly unfavourable, and only a few captures were made. On August 29th, *Anaitis efformata* was found in considerable numbers, and good series were secured. Ichneumon flies were numerous in the early part of the summer, and these probably took their toll of the lepidoptera, as only a very small proportion of the large hordes of larvae of *Aglais urticae* that were observed in June seem to have reached maturity.

H. J. BURKILL, *Hon. Secretary.*

BOTANICAL SECTION.

DURING the year the section was responsible for two lectures at ordinary meetings, *viz.*:—"A Botanical Holiday at the Lizard in June," by Mr. E. B. Bishop, and an "Exhibition of Botanical Lantern-slides," by Mr. A. W. Dennis. The two sectional meetings were occupied by discussions on the order Boraginaceae and members' summer work.

One field meeting was held within the society's district, on May 9th, Arbrog Common and the commons towards the Black Pond, Esher, being visited. The season being a late one, not much was seen of special interest, but the cotton grass (*Eriophorum*) was noted in flower, a state in which it is not always readily identified.

Members of the section also joined the plant galls excursion to

Leatherhead and Box Hill on August 29th. The invasion of a hill-side lately cleared of trees by plants of cultivated land, including *Ajuga Chamaepitys*, Schreb., was well observed near Headley Lane.

For the northern portion of the district 4 new species have been added to the records, including *Eleocharis multicaulis*, Sm., and *Carex helodes*, Link, both detected in Epping Forest. For the southern portion 14 new forms have been added. These include *Viola canina*, L. $\times$ *Riviniana*, Reichb. (*London Nat.*, 1924, p. 16.), *Rosa spinosissima*, L., *Rosa tomentella*, Léman, *Anthriscus cerefolium*, Hoffm., and *Setaria viridis*, Beauv.

The recorder—Mr. E. B. Bishop—will still be glad to receive lists of plants observed in all parts of the district. The exact locality, sub-district, and date of observation should always be stated.

The publication of the 11th edition of the London Catalogue of British Plants is an event of importance to systematic botany, and the revision of certain genera, e.g., *Rosa*, *Hieracium* and *Enphrasia* therein, will provide work for our recorders for some time to come. The society's collections and records are compiled in accordance with ed. X, but new species and segregates can be interpolated as required, and the records will be gradually brought into line.

At the annual meeting of the section, held on December 1st, Mr. H. Spooner was elected chairman, and Mr. L. J. Tremayne, secretary, with a committee of three members.

R. W. ROBBINS, *Chairman*.

CHINGFORD BRANCH

WHILST the numbers of the branch associates has been well maintained, the attendances still leave something to be wished, though there have been signs of improvement during the July-December session. The highest attendance was 46 and the lowest 7. This last was, however, accounted for by the inclemency of the weather.

The branch have to deplore the loss by death, after a long and painful illness, of their chairman Mr. Hubbard. His place has been taken—very fortunately—by the Rev. H. J. Gamble, M.A., an old and valued member of the society, and we look forward to increased activity in every way in 1926.

The following lectures were delivered during the year: "Birds of the Shetland Islands," by W. E. Glegg, F.Z.S., "Notes on the Vertebrates," by E. Samuelson, "The Trees of Epping Forest," by R. W. Robbins, "Some English Mediaeval Monasteries," by R. Marshmann-Wattson, "Our Woodland," by J. Ross, "British Land and Fresh-water Shells," by Mrs. Hillier, "Animals and Plants of the North Eastern States of North America," by Miss Hibbert-Ware, F.L.S., "Notes on the Cromer Coast," by Rev. H. J. Gamble, M.A., "The Geology of the London Basin and the Isle of Wight," by C. O. Harvey, B.Sc.

An enjoyable visit was made to the Zoo Aquarium in July. This will be repeated at a convenient date, probably annually.

E. SAMUELSON, *Secretary*.

LIST OF MEMBERS

It is particularly requested that Members will inform the Secretary as soon as possible of any change of address

HONORARY MEMBERS

- Grant, G. F. H., Beaumont Manor, Wormley, Herts. (Arch.)
Massey, Herbert, M.B.O.U., F.E.S., Ivy Lea, Burnage, Didsbury, Manchester. (Lep., Orn., Ool.)
Burrows, Rev. C. R. N., F.E.S., The Vicarage, Mucking, Stanford-le-Hope, Essex. (Lep.)

MEMBERS

- Adkin, R., F.E.S., "Hodeslea," Meads, Eastbourne. (Lep.)
Aldred, Miss B. A., 16, Boscastle Road, Dartmouth Park, N.W.5.
Aldred, Miss M., Flat 5, 21, Ladbroke Gardens, Notting Hill, W.11. (Orn.)
Archbould, R.S., Forest Way, Loughton. (Orn.)
Aris, A., 1, Ivy Villas, Oldfield Road, Hampton.
Aris, E. A., 9, Oak Avenue, Priory Road, Hornsey, N. 8. (Lep.)
Ash, Edward C., M.R.A.C., F.R.M.S., c/o Midland Bank, Chelmsford, Essex. (Pond Life. Spiders).
Austin, S., 43, Darent Road, Stamford Hill, N. 16. (Orn., Arch.)
*Baker, Edward C. S., J.P., O.B.E., F.Z.S., F.L.S., M.B.O.U., H.F.A.O.U., 6, Harold Road, Upper Norwood, S.E. 19. (Orn.)
*Battley, Mrs., 6, Craven Avenue, West Ealing, W. 13.
Bayne, Charles S., 56, Prince of Wales Mansions, Battersea Park, S.W.11. (Orn.)
Beattie, W., 8, Lower Grosvenor Place, S.W. 1. (Lep.)
Bell, William H., "Hillcrest," 74, Sylvan Avenue, Wood Green, N. 22. (Lep.)
Benn, Miss A., 68, South Esk Road, Forest Gate, E.7. (Orn.)
Biddiscombe, W., "Whincroft," Ivy Lane, Woking. (Bot.)
Bidwell, Edward, 12, Woodberry Grove, Finsbury Park, N. 4. (Orn.)
Bishop, E. B., "Lindfield," Marshall Road, Godalming. (Bot., Arch., Plant Galls., Orn.)
Blackett, Miss F., 196, Cromwell Road, S.W.5.
Blezard, Miss R., F.Z.S., 89, Eaton Square, S.W.1. (Orn., Bot.)
Blount, S., 40, Woodhurst Road, Acton, W.3. (Arch.)
Boardman, Stuart, "Greenhigg," Friary Lane, Woodford Green, Essex. (Orn.)
Bradley, S. W., 5, Monkham Avenue, Woodford, Essex. (Lep., Chem., Ast.)
Braithwaite, J. O., 18, Warren Road, Chingford, E. 4. (Micr., Bot., Ent.)
Braithwaite, Miss N. A., 18, Warren Road, Chingford, E. 4.
Brierley, C. H., 16, Tavistock Square, W.C. 1. (Micr.)
Browne, Miss Constance H., 219, Harlesden Road, Willesden, N.W.10 (R., Arch.)
Brown, A., 44, Ravensdale Road, Stamford Hill, N. 16. (Orn., Arch., Geol., R.)
Burkill, H. J., M.A., F.R.G.S., 3, Newman's Court, Cornhill, E.C.3. (Plant Galls, Lep., Bot., Geol., Orn., R.)
Capleton, A., Beaufort House, 37, Lansdown Road, South Woodford. (Mam., Orn., R.)
Chapman, E., 219, Harlesden Road, N.W.10. (Arch., Geol., R.)

- Clark, J. W., "Hazeldeane," 10, The Ridgeway, Chingford, E. 4. (Bot.)
- Cockayne, E. A., M.A., M.D., F.R.C.P., F.E.S., 116, Westbourne Terrace, W. 2. (Lep., Biol.)
- Cocksedge, W. C., 6, Aldersmead Road, Beckenham, Kent. (Orn., Arch.)
- Collenette, C. L., F.E.S., Gothic Lodge, Woodford Green, Essex. (Bot., Orn., Dipt.)
- Cooper, B., 103, Bethune Road, Stamford Hill, N. 16. (Lep., Bot.)
- Cyriax, R. C., 23, Aberdare Gardens, West Hampstead, N.W. 6. (Arch., Aryan question, Indo-European languages.)
- Dallas, J. E. S., 38, Richmond Road, Islington, N. 1. (Orn., Bot.)
- Dallas, Mrs. Rosa F., 38, Richmond Road, Islington, N. 1.
- Dannatt, Arthur C., 70, Victoria Street, S.W. 1. (Arch.)
- Davis, E. J., M.I. Mech. E., Milestone, Church Hill, Loughton. (Orn.)
- Deane, Miss M.B.H., 1, Cronwall Place, S.W. 7. (Orn.)
- Doll, F. G., "The Hut," Russell Road, Buckhurst Hill, Essex. (Pond life, Micr., Orn.)
- Douglas, J., "The Maples," Alvaston, near Derby. (Lep.)
- Edelsten, H. McD., F.E.S., "Hillside," Lindfield, Sussex. (Lep.)
- Eynon, Lewis, B.Sc., F.I.C., "Fernleigh," Hall Lane, Upminster, Essex. (Chem.)
- Farish, Mrs., "Stapleton," 46, Culverley Road, Catford, S.E. 6.
- Forster, W. C., 57, Warwick Road, Earls Court, S.W. 5. (Arch., R.)
- Foster, John B., "Aldwick," Holland Road, Sutton. (Orn.)
- Gamble, Rev. H. J., M.A., 14, Frederica Road, Chingford, E. 4. (Arch., Conch.)
- Gaze, W. E., 10, The Avenue, Highams Park, Chingford, E. 4. (Lep., Bot., Chem.)
- Gerrard, V., 59, Campden Hill Court, Campden Hill Road, Kensington, W. 8. (Lep.)
- Glegg, W. E., F.Z.S., M.B.O.U., The House, Albion Brewery, Whitechapel Road, E. 1. (Orn.)
- Glegg, Mrs., The House, Albion Brewery, Whitechapel Road, E. 1. (Orn.)
- Greenwood, M., M.R.C.P., M.R.C.S., "Hillcrest," Church Hill, Loughton, Essex. (Arch., Biol.)
- Grinling, C. H., B.A., 71, Rectory Place, Woolwich, S.E. 18. (Bot.)
- Hall, L. B., F.L.S., "Lingdene," King's Avenue, Parkstone, Dorset. (Bot., Galls., Biol., Geol., Micr.)
- Hanbury, Frederick J., F.L.S., F.E.S., Brockhurst, East Grinstead. (Bot., Lep.)
- Hanbury, F. Capel, Hoddes Hall, Hoddesdon. (Lep.)
- Hanson, P. J., "Burocroft," Village Road, Bush Hill Park, Enfield. (Orn., Arch.)
- Hardiman, J. P., C.B.E., B.A., 1, Chatsworth Road, Brondesbury, N.W. 2. (Orn., R.)
- Harding, J. Rudge, O.B.E., Star and Garter Home, Richmond, Surrey. (Orn.)
- Hart, C., 73, Windsor Road, Forest Gate, E. 7. (Orns., Bot.)
- Heath, G. H., M.A., 7, St. Philip's Road, Surbiton, Surrey. (Lep.)
- Hibbert-Ware, Miss A., F.L.S., The White Cottage, Gilwell Lane, near Chingford. (Orn.)
- Hillier, Mrs. J. B., 8, Homerdale Road, Bromley, Kent. (Conch., Arch.)
- Hobson, G. D., Christ's College, Cambridge. (Lep.)
- Horn, P. W., 10, Sheringham Gardens, Romford, Essex. (Orn., Aquaria.)
- Hornblower, A. B., 91, Queen's Road, Buckhurst Hill, Essex. (R.)
- Howard, D. Lloyd, J.P., F.I.C., F.C.S., Pettits Hall, Chigwell. (Chem.)
- Jehan, Kenneth C., 49, Bruce Grove, Tottenham, N. 17. (Bot.)
- Jones, Mrs. D. Llewellyn, 5, Russell Gardens, Golders Green, N.W. 11. (R.)
- Jones, Jock Ll., 5, Russell Gardens, Golders Green, N.W. 11. (R.)
- *Kaye, W. J., F.E.S., "Caracas," Ditton Hill, Surbiton, Surrey. (Lep.)
- Korner, Miss Theodora, 9, Addison Bridge Place, Kensington, W. 14. (R.)
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